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JANUARY TO JUNE, 1940

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

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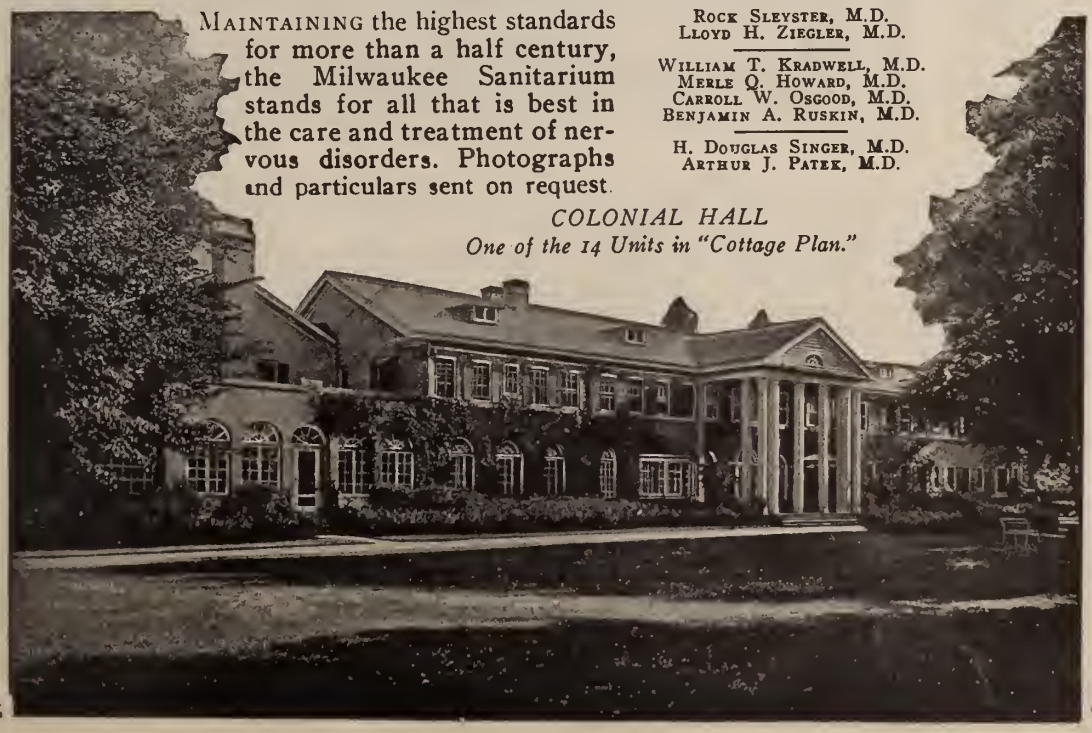
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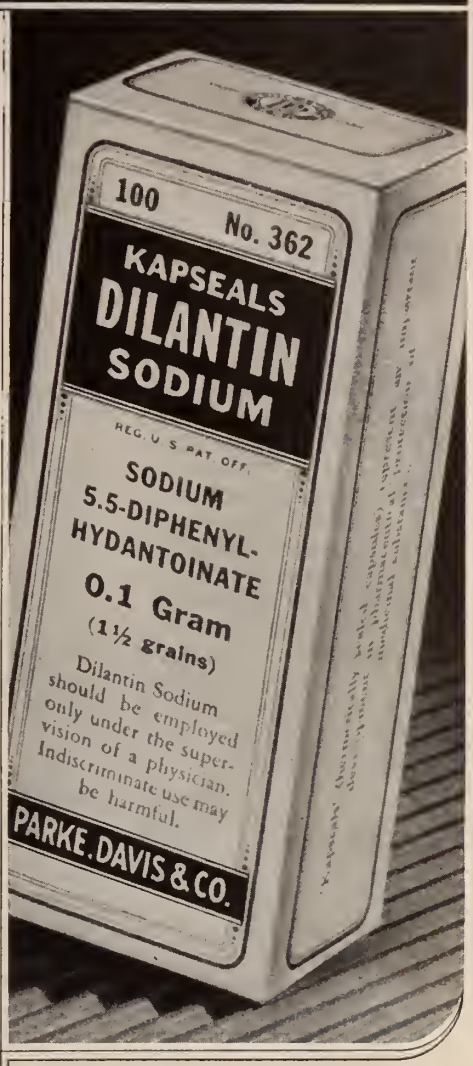
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The World's Largest Makers of Pharmaceutical and Biological Products

METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

IV. Measurement of Vitamin B_1 Activity

● The existence of the factor now known as vitamin B_1 was first established by the work of Eijkmann over four decades ago. In 1912, Funk (1) isolated a nitrogenous substance —capable of curing polyneuritis—to which he applied the provisional name of "beri-beri vitamine." Vitamin B_1, therefore, is the first of the essential food factors to be termed a vitamin.

Despite this fact, it has only been within recent years that specific biologic methods for estimation of this vitamin—free from the serious limitations of the earlier assay methods—have become available. Many of the earlier techniques were proposed before resolution of the "vitamin B complex" into its component factors. In addition, only within the past few years have reference standards of vitamin B_1 activity—the standard absorption product and thiamin—become generally and conveniently available for use in the quantitative determination of vitamin B_1.

As indicated in a recent review (2), modern bioassay methods for vitamin B_1 are quite diverse in detail. It is hoped that identification of this dietary essential (3) will soon bring a dependable chemical method for its estimation which will permit more extensive and reliable investigation of the vitamin B_1 activities of foods than has heretofore been possible. Recent advances in the science of nutrition, however, have brought definite refinement and improvement of modern bioassay methods for determination of the antineuritic factor.

In illustration, quite recently a rat curative technique employing crystalline thiamin chloride as the Reference Standard was endorsed by the U. S. P. Vitamin Advisory Board (4), for use in determining the vitamin B_1 activities of foods or other biological materials which contain a sufficiently high concentration of the vitamin. In this method young rats (not exceeding 50 grams in weight or 30 days of age) are maintained on a specified vitamin B_1-deficient diet until their body stores of the vitamin are depleted as judged by the onset of acute polyneuritis. Such depleted animals are suitable for use in the assay proper provided the depletion period required for the development of acute polyneuritis has not exceeded 75 days.

To each properly prepared animal is administered a single dose of the reference standard of such size that a curative period of not less than 5 or more than 15 days will be produced. Each animal is then carefully observed until the exact degree of acute polyneuritis reappears, at which time an appropriate single dose of the material under assay is administered. The duration of the cure of polyneuritis is again observed. Only data obtained from successive administration to the same animal of reference standard and assay material (using not less than 8 rats) are to be considered. Data obtained from groups of rats in which the duration of the cure following the administration of assay material is equal to or greater than that produced by the reference standard are suitable for use in calculating the vitamin B_1 potency of the materials under assay.

As has been previously described (5), the effect of commercial canning on vitamin B_1 is variable and in any specific case largely depends upon the nature of the product itself. However, among the great variety of commercially canned products are many foods which—when included in the varied diet—will contribute valuable amounts of this essential vitamin.

AMERICAN CAN COMPANY
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(1) 1912. J. State Med. 20, 341.
(2) 1938. J. Am. Med. Assn. 111, 927.
(3) 1938. J. Am. Med. Assn. 110, 727.
(4) 1939. J. Am. Pharm. Assn. 28, 267.
(5) 1939. The Canned Food Reference Manual, American Can Co., New York.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-fifth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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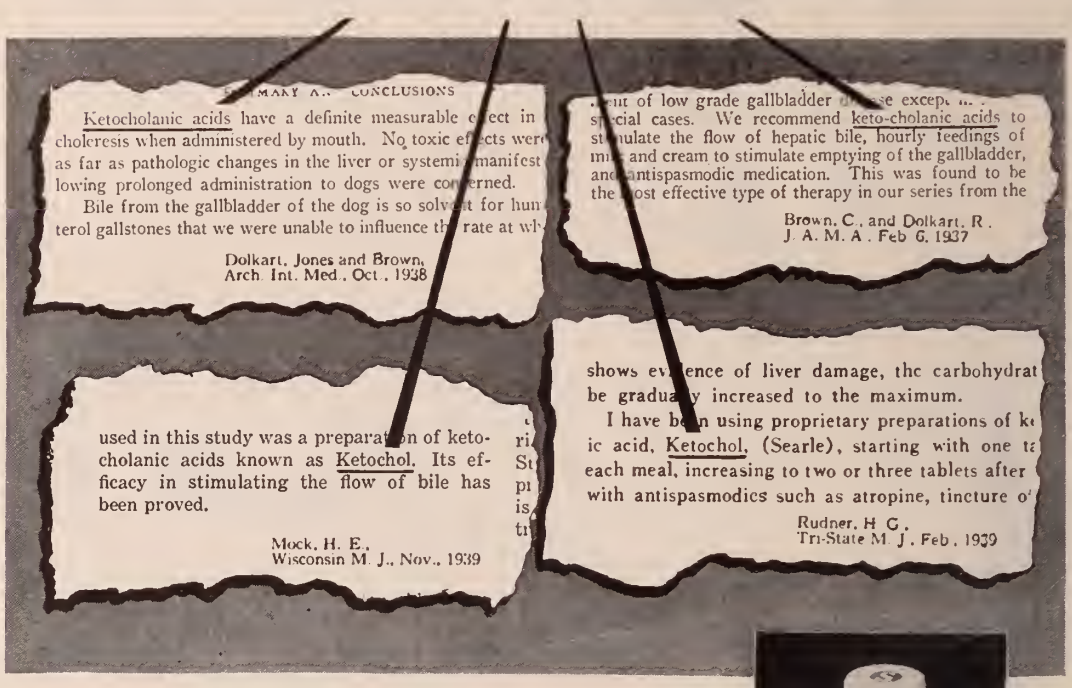
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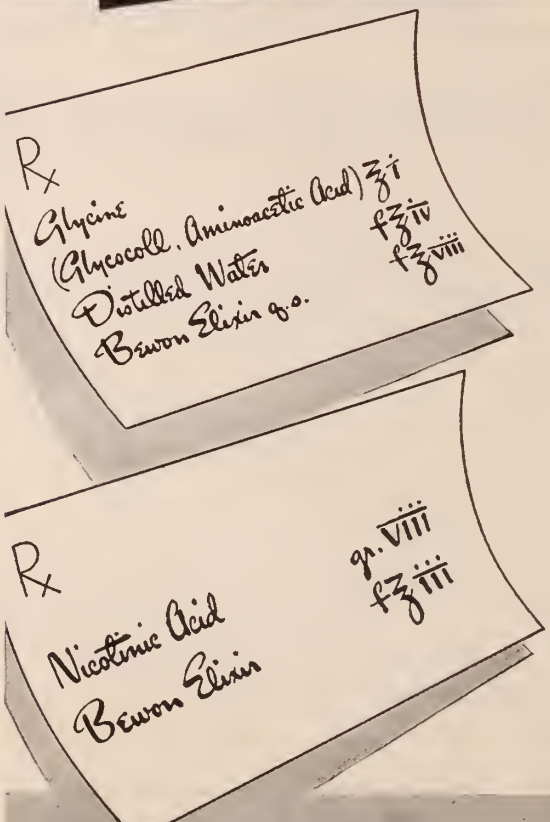
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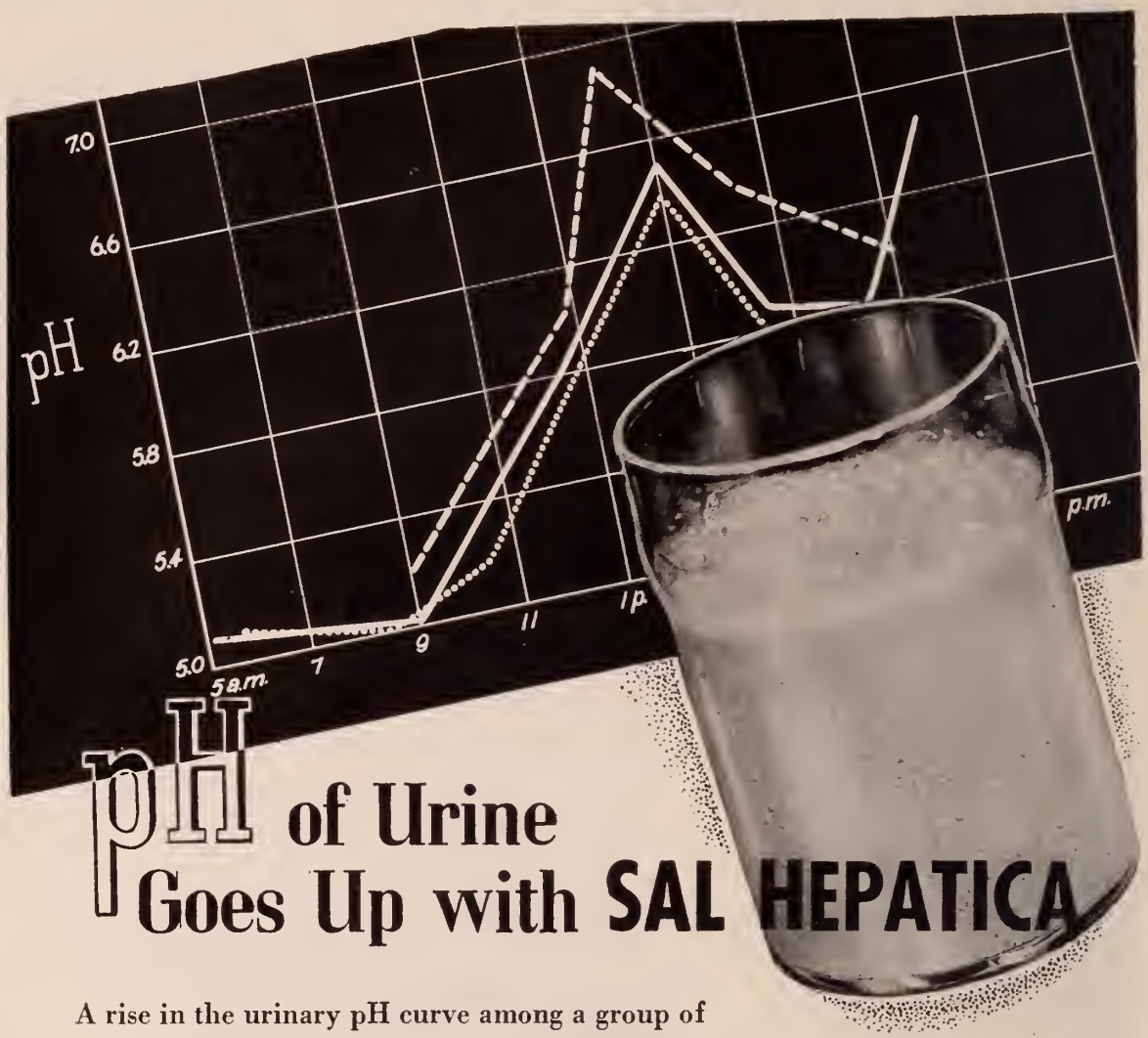
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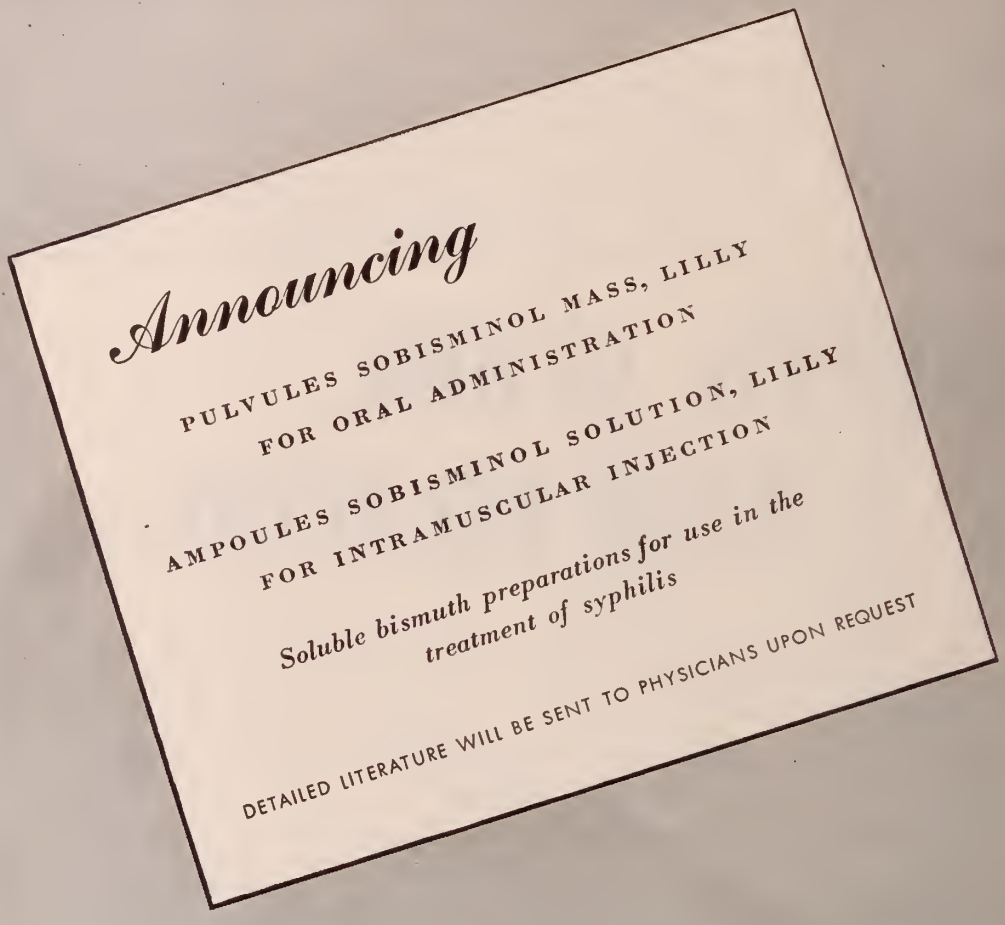
*"**PEPTIC ULCER**—The Effect of High Protein Diet on the Behavior of the Disease" by Windwer and Matzner, Am. Jl. Dig. Dis. 5:743, 1939.

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ILLINOIS MEDICAL JOURNAL

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Editorials

ALERTNESS AND LEVELHEADED LEADERSHIP ARE NEEDED AMONG AMERICAN DOCTORS

Minnesota Medicine is given credit for the following:

One possibility is sensed by all who visit Washington. If the United States should be drawn into war—and returning congressmen do not dismiss that possibility lightly—then medicine will be one of the first departments of civil life to be subjected to emergency dictatorship. Members of the Medical Reserve Corps and all of the younger physicians will be conscripted for war service. Medical services at home will be proportionately demoralized and those who remain will be under emergency orders to go where they are needed most.

The dislocation of medical services will be far greater in case of a new war than it was in 1917 because War Department plans for the draft are said to be far more complete and far reaching. They will, in all probability, be put into effect immediately. The effect upon civilian services will be equally immediate and disastrous, unless the government steps in.

The question is: will the government step out? *To some observers, it seems unlikely that physicians will regain complete freedom of practice when the emergency is over.*

In any case, there are no ready made answers to the questions that the current crisis will present to the world. One thing alone is certain: Alertness and levelheaded leadership are needed among American doctors.

HAPPY NEW YEAR

The seasonal phrase *"HAPPY NEW YEAR"* mocks the ears and hearts of men with the echoes from maddened Europe and the tremors of an America harassed by a bad attack of economic and political indigestion.

We realize that we are in the presence of a great social and economic upheaval, that nations are being made, unmade and remade. That the

medical profession will to a great degree be caught in the sweep of forces beyond its control; that it is potent and responsible for the part it shall play in the new order of things. For all of us it is bound to be a strenuous time of readjustment; it is also an unequalled time for surveying the future of medicine and formulating plans for rational development.

Ever since the close of the World War—a conflict that instead of ending war among civilized peoples, actually laid the sticks for a fresh conflagration—men have hugged to their bosoms the slogan, "RETURN TO NORMALCY."

To some, such an achievement seems further away today than it has at any hour since that when Plymouth Rock became the symbol of the most rational democracy that history records.

Medical dogma insists that until a patient is in the final stages of dissolution, a physician shall never abandon his optimism. "While there is life there is hope."

So this dogma should correlate with every wish expressed for a "happy NEW YEAR."

Properly epitomized the balance swings less evilly than first glance indicates. True, probably ninety per cent. of America's practicing physicians sit today in a wilderness of oppressively high taxation, encroaching lay domination, increasing bureaucratic control, hampering legislation, uncollectable accounts, and the encumbrance of a mortal body as well as the human frailties of ordinary men.

Remember that each and every one of these burdens can be lifted if the proper leverage is employed to rid the profession of such incubi. *"They who live by the sword, shall die by the sword"* is ably paraphrased into the pronouncimento that *"They who live by the ballot may win and rule by the ballot."*

Right of suffrage and power of individual opinion formed the milk upon which the United States of America was first nourished and first thrived. Of late years it has become the habit of too many Americans, especially of professional men, to neglect this gift of gifts. The ballot has developed into the plaything of politics. Thus cast out from the hearts of able men, it has evolved into a sad and wanton thing—a destructive rather than a fundamental force of expansion.

When professional men, especially physicians, recognize that public office must receive as much scientific attention as public health, and interest themselves again in the laws of the land, the lawmakers and the law enforcers, the problems of medical practice and of medical economics will be simplified to the point of solution.

Then and then only can it be expected that the un-American doctrines of communism and rebellion, paganism and brute force, ignorance and irrationality will be banished from the United States.

As a nation, we have left our fences unrepaired, our gates unguarded. We have welcomed the oppressed of other lands, only to discover that their chief baggage has been the seeds of what was their oppression, and which they have without conscience sown with destructive prodigality. Instead of Class Rule and by class here is meant that broad sense of freedom pivoted upon a sense of personal responsibility that made America great—these traitorous guests would inflict upon us Mass rule or the domination of the mob.

Any man who has read of the fight that Finland, small, doughty and honest nation, has made this past month to protect her homes and her tenets must realize anew and enviously the necessity for "hearts of oak" and souls of steel. Finland's courage is shining like a star out of the Continent's carnage and revives in men worth while the knowledge that for every venomous unreasoning hate there can be and must be substituted human wholesomeness and a true sense of the fraternity of man.

With this truth emphasized and the immediate necessity for *American action,* concerted and efficient, borne in upon every United States citizen who merits that name, *sanity* will return to the world, or at least to that part of it that was born in 1776!

Personal responsibility, a willingness to work and decency of ideas and conduct, are essential for human wholesomeness. In such a condition there is no place for that license which is the soul of communism, and which disregards those teachings of the centuries that insist upon self-discipline and unremitting restraint.

From such discipline, from such restraint, and from all the other fibres of a true democracy, are bred men. Findland's *men* have upset the world's ideas of Russia's *man-power.*

Quoting a Finnish American professor of economics, "Russia held herself to be a nation of generals, with every man smarter than the next one. That's sovietism. Finland knew that what is needed is a few men smarter than the rest of them and all men disciplined and so a nation of soldiers; of men who are cognizant of human interdependability and sensible of the concepts of God. That is Americanism."

Here in the very shrine of a democracy those sacred fires must not be let expire. It is the duty of every citizen born or naturalized in the United States, and especially of American physicians, to feed those democratic fires by judicious use of the ballot. It is the sworn and holy duty of all medical men to save life. The profession breaks that vow when it neglects to employ the ballot, that instrument that venerates human life and toils indefatigably for its preservation, and instead sits in negligence whole those forces that hold men as merely cannon fodder and woman only as a flesh-and-blood factory for the purpose of manufacturing such a product everywhere flourish and invade.

The new decade of the century should go down in history as a fresh and purposeful "Roaring Forties." Clamor of the next ten years should be the vociferousness bellowing of an enraged lion putting to rout insidious enemies that threaten his life and his freedom.

"DUTY" is the watchword of the new decade; duty to ourselves, to our science, and to our nation as well as to all humanity.

With the first performance of the initial steps of this task will come the feeling of strength and power and contentment that will bring to pass a truly "Happy New Year."

Get Busy, Doctor! Find out at the next meeting of your medical society what organized medicine can and must do with that basic weapon of democracy—the ballot.

When you and your society so act, then "Happy New Year" will become not a phrase, but a fact.

THE DE-PERSONALIZATION OF MEDICAL SERVICE

"Jolted by economic catastrophe society has become disordered, political parties have new bases for alignment, labor has become increasingly powerful, capital enterprise has been looked on with disfavor and medicine has ceased to be an independent priesthood, a law unto itself. Perhaps we draw too simple an analogy when we see that the people are coming to look upon medical care as a public utility, like electric power, needed by everyone and necessarily available to meet that need." This quotation from an editorial in the November, 1939, issue of the Kentucky Medical Journal states, we believe, the most important flaw in any scheme of governmental domination of medical service. For as soon as medicine becomes an arm of the government it will be a service—almost a utility—to be plugged into and used in an impersonal way. It is this de-personalization of medical practice which would produce the greatest distress to the citizen. He may not be concerned about the economic status of the physician but he can not help but be affected by a movement away from that type of service which he has always demanded. For the personal relationship has always dominated the individual in the choice of a healer. Not only the sick but the well, not only lay persons but physicians tend to seek out a personal authority; each may find his choice completely satisfying because of the personal relationship. This has been variously called "attention" or "service." The psychologist speaks of it as the establishment of "rapport"; the religionist may relate it to "brotherly love" or to "worship." This personal relationship is often established through such attention as is expressed in the "laying on of hands." In this way various cultists and masseurs have probably convinced patients of their *personal interest* in them. As soon as the patient is convinced of the establishment of this personal relationship, regardless of who sets it up, he is in a mental position for a "cure."

This personalization of medical care is no recent development in our practice. It is as old as man. One of man's first social necessities was that of worship. As he became more civilized he developed "personal" gods—gods of his own likeness but with supernatural attributes. Likewise as civilized man became ill he sought out a *person* in touch with the appropriate god of healing—Apollo, for instance—to restore his health. Gradually the physician and not the god became in the mind of society endowed with mystic healing power which arose within him alone. His pronouncements bore great authority.

Should he say powdered unicorn horn was the ideal treatment then powdered unicorn horn was necessary.

It is to be borne in mind that the patient by his desire and from his necessity created the personalization of medical service. He could not tolerate a lack of power or evidence of a lack of complete knowledge in his doctor. Doubtless the early physician who openly carried on research thereby admitting limitations of his knowledge, exposed himself to the economic dangers of a failing practice and to the imprecations and threats of those who believed him to be incompetent and a humbug. However healers from the earliest times took on investigation or research occupations and we admit our debt to Hippocrates, Galen, Vesalius and a subsequent host.

As civilization progressed into the Renaissance and modern times the fallibility of man and the lack of his knowledge became increasingly known. Coincidentally the search for facts became widened and greatly intensified. Authority tended not to center in individuals or personalities so much as it did in factual accumulation. The result eventually was to place "ability to heal" in the centers of accumulation of knowledge. Schools and attached hospitals steadily assumed greater and greater importance in the business of healing. As the institutionalization of medical service developed, independent hospitals and, later, clinics shared in the position of authority in matters of disease. Yet while all this de-personalization of medical service was going on there was parallel with it a continuing *demand for personal care.* People can no more be dispossessed of this desire than they can be separated from their tendency to worship.

We must admit that cultists, faddists and charlatans have thrived on the need of persons for individual care even in medical centers and particularly where medical care was administered with "scientific" detachment. Hospitals, clinics, and medical schools may not have realized the trend away from individual care for the patient but the administrators of these institutions never forget the place of "individuals" in their organizations. As physicians of striking capacity emerge here and there from the general group they are sought after by these institutions and become busy. But their opportunities for personal service generally become diluted with administrative responsibilities or with teaching. The result is the transfer of their large responsibilities for patients to assistants who then become the persons upon whom the patients depend. Thus it is true that the great men in large centers are frequently not in reality the persons immediately affecting the patients. They disperse patients about them and an intended strong personal relationship is thwarted or sidetracked. A further factor which has tended to defeat the individual's search for personal care in modern times is the delegation of work. The patient may be unnecessarily routed through specialists, technicians and pharmacists. And unfortunately these very assistants may be quite necessary due to the complexity of their indicated services. These events and procedures surrounding the work of the outstanding institutional physician are nothing more or less than *regimentation*—a, to him, beneficent regimentation set up to make his time as scientifically effective as possible. Obviously it interferes with personal care; very decidedly it is less regimentation than would occur under political control.

What direction shall we take? Is increasing specialization (with attendant decreased personalization) the inescapable trend of medical practice? There are certain signs that this is not true. In the past, analysis of every field of medicine has been the method of learning and sometimes unfortunately the only method of approach to the patient. Where analysis is the chief technique many persons—specialists—are required to deal with the complexity of data. Once these separate facts are understood in relation to the whole organism a synthesis of information occurs. It now appears that the development of fundamental information has progressed to a point at which the newly trained practitioner can without many doubts about the value or completeness of his knowledge proceed to care for patients with personal conviction and assurance. *An intense personalization of medical care is now beginning.* Doubtless the evolution of studies in physiology and psychology gives birth to this trend. The next thirty years can not help but witness the general use of information developed in these two fields in the last thirty years. But the *personal relationship*

is the only means medicine has of developing the ultimate use of its synthesized knowledge.

Lay people appreciate these facts in a general way. We must extend their understanding of this matter—perhaps in the terms of an editorial in the Leavenworth Times May 4, 1939. "The relation of a doctor to his patient is one of the closest of human relationships. There is an intimacy that grows up there with which nothing must interfere. Yet the government proposes to disturb this sacred relationship. . . ."

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

Today the medical and health functions of the United States are divided among a multiplicity of departments, bureaus, and federal agencies. Thus, the United States Public Health Service is in the Federal Security department; the Maternal and Child Welfare Bureaus in the Department of Labor; the Food and Drugs administration in the Department of Agriculture; the Veterans' Administration and many other medical functions are separate bureaus of the government. The WPA, CCC and PWA are concerned with a similarity of efforts in the field of preventive medicine. The Federal Works Administration and the Federal Housing Administration also have some medical functions.

Since 1875, the American Medical Association has urged the establishment of a single agency in the federal government under which all such functions could be correlated in the interest of efficiency, the avoidance of duplication, and a saving of vast sums of money. Such a federal health agency, with a secretary in the cabinet, or a commission of five or seven members, including competent physicians would be able to administer the medical and health affairs of the government with far more efficiency than is now done.

2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

The physicians of the United States have given freely of their time and of their funds for the care of the sick. Their contributions to free medical service amount to at least $1,000,000 a day. The physicians of this country have urged that every person needing medical care be provided with such care. They have urged also the allotment of funds for campaigns against maternal mortality, against venereal disease, and for the investigation and control of cancer. The medical profession does not oppose appropriations by Congress of funds for medical purposes. It feels, however, that in many instances states have sought aid and appropriations for such functions, without any actual need on the part of the state, in order to secure such federal funds as might be available. It has also been impossible, under present technics, to meet actual needs which might exist in certain states with low per capita incomes, with needs far beyond those of wealthier states, in which vast sums are spent.

It is proposed here simply that Congress make available such funds as can be made available for health purposes; that these funds be administered by the federal health agency, mentioned in the first plank of this platform, and that the funds be allotted on proof of actual need to the federal health agency, when that need be for the prevention of disease, for the promotion of health, or for the care of the sick.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

Obviously if federal funds are made available to the individual states for the purposes mentioned in the second plank of this platform, there might well be a lessened tendency in many communities to devote the community's funds for the purpose, and, in effect, to demand that the federal government take over the problem of the care of the sick. Hence, it is suggested that communities do their utmost to meet such needs with funds locally available before bringing their need to the federal health agency, and that the federal health agency determine whether or not the community has done its utmost to meet such need before allotting federal funds for the purpose.

4. The development of a mechanism for meeting the needs of expansion of preventive

medical services with local determination of needs and local control of administration.

The medical profession is not static. It wishes to extend preventive medical service to all of the people within the funds available for such a purpose. Obviously, this will require not only a federal health agency which may make suggestions and initiate plans, but also a mechanism in each community for the actual expansion of preventive medical service and for the proper expenditure of funds developed both locally and federally. In the development of new legislation such mechanism may be suitably outlined.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

The medical profession does not yield to any other group in this country in its desire to extend medical care to all of those unable to provide themselves with medical service. The American Medical Association through its House of Delegates has already recognized the possible existence of a small group of persons able to provide themselves with the necessities of life commonly recognized as standard in their own communities, but not capable of meeting a medical emergency. It is recognized, however, that only persons of the same community fully familiar with the circumstances can determine the number of people who come properly under such classification and that only persons in actual contact with such instances are capable of administering suitably and efficiently the medical care that may be required. Hence it is the platform of the American Medical Association that medical care be provided for the indigent and the medically indigent in every community but that local funds to be first utilized and that local agencies determine the nature of the need and control the expenditure of such funds as may be developed either in the community or by the federal government.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

In the so-called National Health Program it is asserted that one-half the counties of the United States are without suitable hospitals, and vast sums are requested for the building of new hospitals. In contrast, reputable agencies within the medical profession assert that there are only 13 counties more than 30 miles removed from a suitable hospital and that in 8 of those 13 counties there are five people per square mile. In the United States today the percentage of hospital beds per 1,000 of population is higher than that of any other country in the world. This fact is completely ignored by those who would indulge in a program for the building of great numbers of new hospitals.

Moreover, it seems to be taken for granted that hospital building has languished in recent years, whereas considerable numbers of hospitals have been built with federal funds by various state agencies and also by the PWA, the WPA and by the Federal Works Administration.

Analyses may indicate that in many instances such hospitals were built without adequate study as to the need which existed or as to the possible efficient functioning once it was erected. Moreover, there is evidence that in recent years many of the hospitals of the United States known as nonprofit voluntary hospitals have had a considerable lack of occupancy due no doubt to the financial situation in considerable part. It seems logical to suggest then that such federal funds as may be available be utilized in providing the needy sick with hospitalization in these well established existing institutions before any attempt is made to indulge in a vast building program with new hospitals. In this point of view the American College of Surgeons, the American Hospital Association, the Catholic Hospital Association, the Protestant Hospital Association and practically every other interested voluntary body agree.

Again it has been argued that the demands for medical care in some sections of the country might require the importation of considerable numbers of physicians or the transportation of numbers of physicians in the areas in which they now are to other areas. In this connection it would seem to be obvious that a change in the economic status of the communities concerned would result promptly in the presence of physicians who might be seeking locations. The utilization of existing qualified facilities would be far more economical than any attempt to develop new facilities.

7. The continued development of the private

practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

In the United States today our sickness and death rates are lower than those of any great country in the world. This fact was recognized by the President of the United States when he sent the National Health Program to the Congress for careful study. The President emphasized that a low death rate may not mean much to a man who happens to be dying at the time of tuberculosis. The medical profession recognizes the importance of doing everything possible to prevent every unnecessary death. At the same time it has not been established by any available evidence that a change in the system of medical practice which would substitute salaried government doctors for the private practitioner or which would make the private practitioner subject to the control of public officials would in any way lower sickness and death rates.

There exists, of course, the fact that some persons are unable to obtain medical service in the circumstances in which they live and that others, surrounded by good facilities, do not have the funds available to secure such services. Obviously here again, there is the question of economics as the basis of the difficulty and perhaps lack of organization in distribution of medical service and a failure to utilize new methods for the distribution of costs which might improve the situation.

The medical profession has approved prepayment plans to cover the costs of hospitalization and also prepayment plans on a cash-indemnity basis for meeting the costs of medical care. It continues, however, to feel that the development of the private practice of medicine which has taken place in this country has led to higher standards of medical practice and of medical service than are elsewhere available and that the maintenance of the quality of the service is fundamental in any health program.

8. Expansion of public health and medical services consistent with the American system of democracy.

Careful study of the history of the development of medical care in various nations of the world leads to the inevitable conclusion that the introduction of methods such as compulsory sickness insurance, state medicine and similar technics results in a trend toward communism or totalitarianism and away from democracy as the established form of government. The intensification of dependence of the individual on the state for the provision of the necessities of life tends to make the individual more and more the creature of the state rather than to make the state the servant of the citizen. Great leaders of American thought have repeatedly emphasized the fact that liberty is too great a price to pay for security. George Washington said, "He who seeks security through surrender of liberty loses both." Benjamin Franklin said, "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."

In these times when the maintenance of the American democracy seems to be the most important objective for all the people of this country, the people may well consider whether some of the plans and programs that have been offered for changing the nature of medical service are not in effect the first step toward an abandonment of the self-reliance, free will and personal responsibility that must be the basis of a democratic system of government.

TRY TO WRITE AN EDITORIAL

Quite apropos is an editorial that appeared under the above title in the current issue of MEDICAL ANNALS:

There are a few things that physicians would rather he capable of doing well than to write and speak effectively. These accomplishments, however, are realized by comparatively few medical practitioners. Perhaps this is just as well for if every physician were occupied with translating his thoughts into the written and spoken word one can conjecture the appalling consequences to readers, not the least of which would be acute mental indigestion.

What inspired these generalizations was a discussion of the recent Conference of Secretaries and Editors held in Chicago. One session of the Conference was devoted to a discussion of state medical journals. Considerable attention was given to editorials and the qualities which make them worth reading. Several editors present spoke on the subject but none more effectively than Dr. Morris Fishbein, who with his usual eloquence stated what he thought an editorial should be.

It was during Dr. Fishbein's remarks that the inspiration came for this editorial. Why not suggest to physicians who read the Medical Annals that they try their hand at writing editorials? Now, it might seem that this is a bold and somewhat dangerous suggestion but the editorial staff of the MEDICAL ANNALS is not as naive as might be thought. Neophytes in editorial writing who decide to make a contribution are due for an enlightening experience. They will learn for the first time that writing involves real labor and that facility of expression is only attained by much effort. Long before they have given birth to their literary efforts they will, if they have any critical sense, have learned how difficult it is to transfer an idea to a sheet of paper in such a way as to portray vividly what they had in mind. At least that is the belief of your editorial board. Why then urge this effort? Well, in the first place, the experience will be worth something. Of more importance, there will be a greater appreciation of the efforts which go into the making of a medical journal. Of course, there are some hardy souls who will eventually contribute an editorial worth while to the MEDICAL ANNALS or to some other journal. And then, of course, there are those few in every medical group who are capable of writing effectively.

No, editorials do not write themselves. The best way to prove it is to try to write one.

PAPERS FOR THE 1940 ANNUAL MEETING

The 1940 annual meeting of the Illinois State Medical Society will be held in Peoria on May 21, 22, 23, 1940. This will be the Centennial Meeting of the Society and those responsible for the success of the meeting are planning an unusual program.

The Committee on Scientific Work composed of the Chairman and Secretary of each of the Scientific Sections held a meeting in Chicago recently to discuss tentative plans for the 1940 program. There will be more general sessions next year than for past meetings, and a few changes in the usual routine. These changes will be announced in the near future.

Any member of the Illinois State Medical Society who desires to present a paper before any of the Sections is requested to get in touch with the proper Section officer as soon as possible. Give the subject you desire to discuss, send a short synopsis of the subject matter, and be sure to write the proper section officer. The list will be given in this article.

Owing to the fact that the papers to be presented before each section must be limited in number the officers of the Sections are anxious to schedule only those papers which in their judgment will be of greatest general interest to all members. They must necessarily be critical in making these selections.

OFFICERS OF SCIENTIFIC SECTIONS

Section on Medicine: Edgar M. Stevenson, Chairman, Bloomington; W. O. Thompson, Secretary, 700 North Michigan avenue, Chicago.

Section on Surgery: Frederick Christopher, Chairman, 2650 Ridge avenue, Evanston; Charles L. Patton, Secretary, Springfield.

Section on Eye, Ear, Nose and Throat: Frank W. Brodrick, Chairman, Sterling; Thomas D. Allen, Secretary, 122 South Michigan avenue, Chicago.

Section on Public Health and Hygiene: John J. McShane, Chairman, Springfield; N. O. Gunderson, Secretary, Rockford.

Section on Radiology: Warren W. Furey, Chairman, 6844 Oglesby avenue, Chicago; Harry W. Ackermann, Secretary, Rockford.

Section on Pediatrics: H. Wm. Elghammer, Chairman, 5307 Hyde Park boulevard, Chicago; Bert I. Beverly, Secretary, 715 Lake street, Oak Park.

Section on Obstetrics and Gynecology: W. A. Malcolm, Chairman, Peoria; Herbert E. Schmitz, Secretary, 25 East Washington street, Chicago.

Any member of the Illinois State Medical Society who would like to present a paper before any of these sections should write to either the Chairman or the Secretary of the Section in which he is interested. One of the officers of each Section resides in Cook County, and the other in the downstate area, and it is desirable for Chicago members to write the Chicago officer, and the downstate doctors should write the downstate official in order that the papers may be fairly well divided between the two groups.

The matter of selecting speakers to appear on the Scientific Programs lies entirely in the hands of the section officers. They alone should be

contacted by any member desiring to appear on the programs.

There will be a number of speakers scheduled to appear at general sessions, which means that all sections will join for a meeting, and have subjects scheduled which are not highly technical but of general interest to all physicians.

In writing to the proper section officer you should send your name and address, the title and subject you desire to discuss and an outline or synopsis of the subject matter of your paper. This will better enable those who are responsible for the development of the program to make a selection for a well balanced group of papers.

The section officers who are responsible for the selection of papers to be scheduled before their respective sections, the local committees of the Peoria Medical Society and their Committee on Arrangements, and the officers and committees of the Illinois State Medical Society are all anxious to arrange an outstanding meeting to celebrate the one hundredth anniversary of the founding of the Society.

There will be an unusual number of fine scientific exhibits of general interest to physicians. In addition, the Hall of Health will be held in a separate building a few blocks away from the meeting places. This group consists of dozens of health exhibits of interest to the public. There will be no admission charge. It will be widely publicized in and around Peoria.

The preliminary program for the 1940 annual meeting will be published in the April Illinois Medical Journal. The official program will appear the following month. This means that the officers of sections who are responsible for the development of the various programs must get their speakers as early as possible.

A LAWYER LOOKS AT STATE MEDICINE*

In this issue we give the appraisal of State Medicine from an eminent attorney, Mr. L. L. Bomberger, President of the Indiana Bar Association, the extract being taken from an article published in the March Journal of the *Indiana State Medical Association*. It is interesting to note that opposition to any form of socialized medicine comes as a rule from clear thinking people and not from those whose opinions are swayed by emotions or biased by paternalism.

"Practically all that is said for the socialization of medical service rests upon emotional reactions; naturally, much that is said against it has the same basis. Aside from that of spiritual adviser and communicant, there is probably no other relation which men sustain to one another which lends itself so readily to the emotional appeal as that of physician and patient.

"It is easy to depict suffering; it is, alas, too easy to find it. It appeals to our sympathies and, therefore, is not only described with great ardor and intensity, but is calculated to work the hearers into a state of fervent resolution, little short of religious revival. This is only too apparent in most of the arguments for enlisting physicians in the public service.

"No advocate of socialized medicine has attempted to deny what obviously he must admit, namely, that the aggregate of human suffering in America for any period by reason of undernourishment, lack of sufficient clothing and shelter exceeds by many fold that which arises out of inadequate medical or surgical care, at least that care to which the afflicted individual would submit if he were financially able. While conditions in a Utopia giving free medical care to all may not be accurately forecast, yet is it not an unfounded assumption that much of the lack of proper medical and surgical care today arises out of a choice to spend income for other things.

"If the State is to set up a system of caring for the sick in the great middle class, why not organize for their aid with respect to the prime necessities of life? It would seem just as logical to impress all purveyors of food and all clothing merchants with some form of governmental control so that the man who is to have a course in socialized medicine shall first be properly clothed and housed at public expense. Is not the difference, at least in great measures, found in the lack of emotional appeal already referred to? But who can assure us that the accomplishments of one will not lead to attempts in others, and finally, in all relations?

"When one needs legal aid, the court provides it as a part of his judicial deliberation and decision. There is no fanfare nor blare of trumpets. When the State finds it necessary to provide food, clothing or shelter for the indigent, this service is performed in a great part without undue emo-

*The Medical Bulletin. Abstract from the Bulletin Toledo Academy of Medicine April '38.

tional agitation, but as a matter of course. The thing is apparently true with respect to medical and surgical aid now furnished at public expense. The grocer and the clothing merchant are free to buy and sell in the open market. They may choose whom they will patronize and likewise select their customers. The lawyer has similar freedom.

"What, then, is the reason for an attempt to regiment physicians and surgeons as functionaries in a totalitarian state? Naturally, those who would change the system of medical service turn first to the conduct of the profession itself for the reasons they advance in support of the change; they dwell upon unprofessional-conduct of certain doctors. One of the charges is that too great a percentage of the average income is required for medical and dental service. Another, that the great middle class suffers; that not sufficient attention is given to preventive measures; that too many untrained pretended to be specialists; that no central authority now exists to compel obedience by patients. Finally, they point to the high grade of medical officers of the army and navy as compared to the average civilian physician, and clinch the argument by pointing to the public school system and saying that the subject of health and medical service should be treated in a like manner.

"A critical examination of the schemes of control proposed need not concern itself with the milder measures, for it may be assumed that the agitators will stop at nothing short of the ultimate, although the wide range of schemes proposed convinces one that there is an utter lack of reasoned conclusions. Their culmination rests in complete government control of the profession, not even limited as proposed in the Lewis Resolution. This conspicuously reflects the attitude of a military dictatorship. Physicians and surgeons are declared by its terms to be in public service and are compelled to function professionally whenever called upon. Moreover, their fees are to be controlled by the Social Security Board. This far exceeds peace-time military control of our citizenry. It actually drafts all physicians into government service. Anyone is permitted now to enter or refrain from entering the regular army. If he voluntarily enters, he knows what his compensation is to be. There are obvious characteristics of military service which clearly distinguish it from all other avocations. One of these is its demand for the full time of those engaged in it, and the physician, it is proposed, shall have a private practice; at least if he has, it is to be subordinated and compelled to give way at all times to the public demand, for being in the public service means that public demands take precedence. This is the exact end demanded by one of the writers defending state medicine (G. W. Haigh, New England Journal Medicine 202: 1078; "The functions of the civil physician become identical with those of the naval medical officer.") There is every reason to assume that if the protagonists of these measures accomplish their ultimate purpose, they will completely eradicate the physician with private practice just as fully as the employees of the post office department are exclusively paid and controlled by the government, even though they handle privately mailed and addressed letters. Power is never content, but feeds and grows upon power. The field is broad and tempting.

"The argument that there is no central authority to enforce obedience discloses the utter abandonment to socialism of those who propose the new system. It means that not only will the government control the physician and his practice, but it will regiment all the citizens and in some manner not openly described by the unpleasant word used to call soldiers to the colors, nevertheless, will actually draft all citizens into the health service. Everyone will be obliged not only to receive medical examination and care, but will be compelled to obey the doctor. Certainly this is despotic to the last degree. The power to compel obedience implies the power to punish for refusal to obey.

"Then, if it be conceded that the personnel of the medical service in the army and navy averages higher than that of the private practitioner, the answer may be found in the more rigid examinations the former are required to undergo, thus eliminating the less intelligent. Nevertheless, it is by no means conceded that the upper strata of the pyramid are occupied by those in military or naval service. It is a matter of selection. It is a matter of common knowledge that the staff of a given hospital in a large city may be far superior to the staff of another. Finally, the fallacy of this argument lies in the fact that if all physicians are in the government service, the average of intelligence and ability is no longer measured by medical officers of the

army and navy but is immediately calculated on the entire profession.

"But the final and what is apparently offered as the clinching argument is that the public school system furnishes a conclusive parallel and that its history is an irrefutable argument in favor of putting physicians exactly where school teachers are. But there are many thousands of teachers in private schools, instructing upwards of two and three-quarters millions of students of all grades. No one has yet said to the teacher that when he finishes his professional course he is immediately in government service. He may seek to enter the public school system or engage in private teaching, at his option. Socialized medicine would leave no such choice to medical students and graduates. They shall not even be allowed the freedom of choice that is permitted to graduates of West Point and Annapolis.

"But the parallel is lacking. It is the pupils in our schools, not the teachers, that constitute the involuntary portion of their personnel. The State has seen fit for its own perpetuation to educate all its citizens to a degree. This is a lawful function of public authority. It is declared in the Constitution of Indiana that:

" 'Knowledge and learning, generally diffused throughout a community, being essential to the preservation of a free government; it shall be the duty of the General Assembly to—provide, by law, for a general and uniform system of Common Schools.'

"But it is nowhere declared that all teachers are *ipso facto* public servants. If the State were to say that everyone qualified to teach school must enter the public school system and also say that every individual must have medical examination at certain intervals under penalty for failure to obey, then the public school system and socialized medicine would be more nearly parallel. This would mean that if every qualified teacher and every qualified physician is compelled to be and is in the public service, then every citizen of the State is also in the public service in the sense that school children are, for he is compelled to accept medical attention from the State even as children receive mental training. This is totalitarianism indeed with respect to these two subjects. It is an easy step then to include the lawyers, the merchants and all others because none of us can live unto ourselves. The theory behind it all must be that when we contact others in earning our daily bread we become subjects for complete control by the State. If the theory applies to one relation, it applies to another and embraces every form of human conduct.

"Of course, the State cannot compel all teachers to be in the public service. In fact it cannot compel parents to send their children to the public schools. That question has been settled, probably for all time, by the Supreme Court of the United States. The court has said that a parent may patronize a parochial school if he sees fit. This necessarily implies that teachers are free to enter private service. The public school system furnishes no precedent for socialized medicine. Moreover, in the light of the private school decisions of the Supreme Court, grave doubts may be entertained as to the constitutionality of proposed plans of socialized medicine.

"But it is said the State is interested in the health of its citizens. This is true, and if for no other reason, because the State may need healthy soldiers for its own defense.

"But bodily impairments and disease more frequently arise from, rather than do they cause, ignorance and neglect of simple rules such as those of hygiene and nutrition. Illness is apt to be the result, not the cause, of a sub-normal life. The solution lies in education of the masses of people rather than putting the physicians under semi-military rule. Nothing proposed by way of regimentation of the medical profession offers escape for the poor white of the South and his dependence upon snuff and bitters, or salvation from the nation-wide credulity that heeds radio ballyhoo and other patent medicine advertising. It does not seem to have occured to those who would take the doctors in hand, that the evils they are seeking to alleviate are not caused by the medical profession, but in the main by ignorance and suggestion, especially the vicious circle of auto-suggestion. Nor do they see that there is an avenue of relief by way of legislation to protect the foolish victims of hoaxes which the medical profession most earnestly denounces and combats.

"Of course, there will always remain the problem of the impoverished. They have always been a problem. They are now cared for at public expense. This is wise and humane. Such physicians as wish to become salaried employees of governmental agencies find the field open to them

and doubtless are content when they enter it. At any rate they are free to leave it.

"This discussion has avoided a statement of the physicians' position on this question. It is not designed as a defense of a worthy, sacrificing and enduring profession. If socialized medicine is best for the people, the physicians will be obliged to bow to it, but it may be predicted with all confidence that, if the day arrives, it will be through a leveling process that has taken individual incentive, enterprise, ambition and triumph out of the hearts of all our people and forced us into the leaden rhythm of the State's blighting goose step.

"There are definite and disturbing signs that self-reliance is on the way out. We are taking soundings in the era of irresponsibility. The extent to which, as a nation, we enter it, inevitably to pass later into its sure successor, the era of despair, depends in no small measure upon the haste and abandon with which we experiment with such nostrums as state medicine.

"Of course, it is impossible for America to change its fundamental law as embedded in its traditions and written in the Constitution so as to put the entire medical profession into the public service, but the conclusion is inescapable that in addition to numberless other evils, this will produce a vast army of malingerers and hypochondriacs. It can be done; but it is not the American way."

THE MENACE OF RATS

The unenviable position which rats have come to occupy as a proven factor in the transmission of certain diseases is well known. Their possible involvement in the transmission of certain infections whose method of communicability is at present unknown can only be surmised. The medical profession definitely realizes that rats are a menace to human beings; that there cannot be recognized a single favorable attribute of the rat; and that all that is known of the rat points to its inevitable involvement with human destiny in both an economic way and in spheres of health.

In writing on this subject in a recent issue of *Hygeia*, John M. Gibson estimates the country's rat population at twice its human population. He also estimates that each of these approximately two hundred million disease carrying rodents consumes food costing at least $2.00 a year each. The nation's annual rat food bill, therefore, amounts to considerably more than half a billion dollars.

Hans Zinsser in his book *Rats, Lice and History*, has recently emphasized an interesting fact usually overlooked by historians. He points out that the ravages of certain diseases have been able to change the course of history and determine the fate of empires. Although there is no certain historical knowledge of the rat in Europe before the twelfth century, it is highly probable that some similar form of rodent was responsible for the spread of such devastating epidemics as the bubonic plague. However, we do know that at about this time the black rat came into Europe from Asia and in an incredibly short time swept the country, although at the present time it has been replaced by the brown rat. Wherever this rat has gone, it has driven out the black rat and all rodents that compete with it. Again there is nothing that can be said in its favor. It can live anywhere and eat anything. It burrows for itself when it has to but when it can, it takes over the habitations of other animals such as rabbits and kills them and their young. It climbs and it swims. It is known to carry the following diseases of men and animals: plague, typhus, trichinella spiralis, rat-bite fever, infectious jaundice, possibly trench fever, probably foot and mouth diseases and a form of equine "influenza." Its connection with other diseases as a vector is quite possible although unproven. —Bull. Sangamon Co. M. S.

IS THE HOME SAFER THAN THE AUTO OR STREET? 'TISN'T SO

People who fell, cut themselves, received shocks, were burned or were poisoned, or who otherwise came to grief in the "safety and security" of their homes were more numerous than those who met with automobile accidents, according to the National Safety Council. It seems unbelievable, but it is a fact, for during 1938 there were 32,000 people killed as a result of automobile accidents, a decline from the previous year; there were 32,500 persons killed as a result of accidents in the home, an increase. Falls and suffocation were the chief causes.

It is easy to see why the high number of home accidents is not so well known. It has to be a pretty spectacular occurrence—like slipping on a cake of soap and sailing through a window, to make the newspaper. Any motor accident receives much space.

FOR OPEN NEWS CHANNELS

"There is nothing so important in a democracy as a free and fair dissemination of information. The telegraph, the telephone, and the radio have become almost as important as the press itself."

Reed, who was a candidate for the Democraic nomination for President in 1928, criticized the general principle of government in business.

"In any business that can be conducted by private companies, governmental management is almost invariably a mistake," he added. "Costs increase, and inefficiency in management inevitably results."

There must be but one type of medical service for all persons—rich and poor alike—medical care that is good in quality, ethical in character and suitable in amount.—*Hygeia.*

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois
Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Emphasizing the many contrasts between the two countries, Mexico and the United States, on a recent trip to Mexico, was the general health of the population and the sanitary conditions under which they live south of the Rio Grande. The writer observed more rickets and its sequelae than he had seen in the past twenty years. And, of course, it is notorious that the sanitary conditions are so bad that typhoid, smallpox and diarrhea are prevalent at all times. It is not surprising under such conditions that there is considerable state medicine, with talk of a great increase to include the major portion of the population. But even there, a marked difference of opinion exists as to the feasibility of any such plan. With the strength of the socialistic movement in Mexico it is not hard to believe that a more general adoption of state medicine will occur. In contrast to the fine sanitary conditions in the United States with preventive medicine being practiced here to an extent unknown elsewhere in the world, it would seem that if there is opposition to such a plan in Mexico, there should be no chance of such a change being even considered here.

Apparently there is a shift of plans at Washington in regard to the line of legislative attack on the Health front. The press of the nation ran a story on December 23rd, quoting the chief executive as favoring the building and maintaining of an indefinite number of hospitals in sparsely settled communities. There was a hint of about a hundred such hospitals to cost around $150,000 to build. This was referred to as a small amount and purported to be in accordance with the ideas of the American Medical Association, which as we all know has been opposing the comprehensive plan of the Senator from New York, Senator Wagner. Comment over the radio and in the so-called "inside dope" weekly letters sent out from Washington is of the opinion that the Wagner Bill is losing favor with the higherups and that a substitute bill may be presented at the coming meeting of Congress. This announcement in the press above referred to may be the opening gun of a flank attack. Certainly we cannot allow ourselves to be lulled into a sense of false security as long as reform is in the air at Washington and the reformers are in the driver's seat.

The subcommittee of this committee, whose preliminary report was printed in the December issue of the ILLINOIS MEDICAL JOURNAL continues to work on the problem of Health Insurance. It has made a critical study of most of the apparently more successful of the plans in operation in various parts of the United States and will report to the Medical Economics Committee, immediately following the meeting of the Council to be held in Peoria on January 7, 1940. At that time we hope to be able to adopt some general recommendation to be presented to the House of Delegates at the next annual meeting to be held in Peoria in May. This committee, particularly the Chairman, Dr. W. M. Hartman, has worked hard on this problem and deserve the commendation of the entire medical profession of the state.

The plan of holding postgraduate meetings at different points in the state is apparently working out to the satisfaction of all concerned. The first one held at Jacksonville in November was successful according to all reports. However, the one held in Champaign, on December 6, apparently was even better, according to the reports which have come to the writer from those who attended both of them. Unfortunately the personal affairs of the writer made it impossible to attend either of these meetings. However, he did help to some small extent in the preliminary planning of the Champaign meeting. We feel sure that there will be a comprehensive report on the meeting in this issue of the ILLINOIS MEDICAL JOURNAL. One of the questions most frequently asked since the Champaign meeting has been when another similar

meeting could be held in this district. With two more similar meetings to be held, one in the northern and the other in the southern part of the state, it is highly improbable that it will be possible to repeat a meeting prior to the annual meeting. It is, however, within the province of the House of Delegates to decide at their annual meeting as to the continuance of the present experiment.

A beginning has been made in holding meetings for the legal, dental and medical profession to acquaint them with the provisions of the Wagner Bill on Health. While many of the medical profession are either uninformed as to the provisions of the bill or believe in smug complacency that "it can't happen here," the other two mentioned professions are completely uninformed on the subject. Until the last few months, the legal profession did not and would not believe that their existence was in any way in danger. But some of this smugness has been rudely jarred by the statements of the Attorney General on attorneys' fees and the advisability of furnishing free legal advice to the indigent and those of work relief. Reformers stop with no one group and the sooner the professional folk of this nation awake to that fact and make a unified effort to maintain their place in society, the sooner the time of our officials at Washington will be given over to running the country in the best possible manner rather than trying to making over the people of the same both individually and collectively.

We hope that the members of the Illinois State Medical Society will give considerable thought to the problem of Voluntary Health Insurance as it is now in operation in different parts of the United States and to consider the advisability and feasibility of a similar plan in Illinois. If you have any comments or suggestions to make, kindly do so through Dr. W. M. Hartman of Macomb, the Chairman of the subcommittee, which is studying this question in all its ramifications.

The Committee wishes its readers the Greetings of the Season and particularly wishes a Prosperous New Year to each and every member of the Illinois State Medical Society.

E. S. Hamilton, M. D.,
Chairman.

Correspondence

A WARNING TO OCULISTS

Trenton, Missouri,
September 27, 1939.

To the Editor:

I am writing you regarding a man who is running around through the country buying glasses, especially from oculists, usually giving a check to the amount of $30.00. This man tries to simulate a farmer and he usually has a notation on the check for corn, cow, hogs, etc. The name on the check to him is no doubt forged and there is no doubt his indorsement on the back of the check is forged. The man is about five feet nine or ten inches tall, weighs about 155 pounds, light sandy hair, blue eyes, smooth shaven with a ruddy complexion. He is about 49 years old.

Should this man come into your office making an attempt to cash such check as the above description, unless proven to be absolutely authentic, please notify the Sheriff of Nodaway County, Maryville, Missouri, or the Sheriff of Grundy County, Trenton, Missouri.

He usually signs his name on the back of the check in a very rough, but plainly legible hand and signs it W. C. Curran, and he usually wishes the difference between the amount of the check and the price of the glasses in cash, but does not call for the glasses. Should he sign his name and such a check be presented to you, please have the sheriff to intercept him.

Should you have any information regarding a man of his description passing checks of the above description, please inform the sheriffs above named, Dr. R. C. Pearson, Maryville, Missouri, or myself.

Herbert C. Kimberlin, M. D.

PROGRESS OF THE ILLINOIS STATE MATERNAL WELFARE COMMITTEE

In 1937 the Council of the Illinois State Medical Society appointed ten physicians to form a Maternal Welfare Committee. The object of the Council was to reduce the morbidity and mortality of mothers and babies through an educational campaign conducted by this Committee.

The Committee met and realizing the vast amount of responsibility and work to be done

in the state before their ultimate goal could be reached decided to enlarge the Committee and build an organization in each county to be known as the County Maternal Welfare Committee. These committees consist of two or three physicians and a number of ladies chosen from the leading women's organizations and operate under the leadership of a county chairman who is a member of organized medicine, selected by his local medical society. There are at the present time one hundred and sixty-six members in our State Maternal Welfare Organization.

During the past two years it has been the policy of the State Maternal Welfare Committee to hold district meetings for the physicians to keep them acquainted with the program and progress of this Committee, but due to the further reduction of the maternal and infant death rates in Illinois which have reached the new low of 39 per 1,000 as compared to 60 per 1,000 in 1929 for infants, and 3 per 1,000 as compared to 6.3 per 1,000 in 1929 for mothers, these meetings have been discontinued.

The Committee now asks each county medical society in the state to cooperate with it by holding one meeting each year on the maternal welfare program, at which time the progress, work and plans of the Committee will be discussed.

It is true that as yet we have not succeeded in bringing our program to the people of the lower bracket, but it is hoped that through the efforts of our new county maternal welfare committees we will soon be able to reach those who most need our help and for whom this program was intended.

This Committee earnestly solicits the cooperation of every physician in the state by insisting on and administering adequate prenatal care to all expectant mothers, thus further reducing the infant and maternal death rates. Illinois now ranks second only to Connecticut, which has a percentage of 2.9 per 1,000, and it is our aim to put Illinois in first place.

T. B. Williamson, M. D.,
Chairman.

John F. Carey, M. D.,
Secretary.

PNEUMONIA SERUM AND LABORATORY TYPING SERVICE

Supplementary list of approved laboratories as of December 5, 1939:

DOWNSTATE SERUM AND TYPING

Olney—The Olney Sanitarium, 606-610 Main Street.

Waukegan—Victory Memorial Hospital Laboratory, 1324 North Sheridan Road.

DOWNSTATE—TYPING ONLY

Belvidere—Highland Hospital Laboratory, 1625 South State Street.

Peoria—John C. Proctor Hospital, Second and Fisher Streets.

Rockford—St. Anthony's Hospital Laboratory, 1401 East State Street.

Sycamore—Sycamore Municipal Hospital Laboratory, 615 Somonauk Street.

Watseka—The Iroquois Hospital Laboratory, South Fourth Street.

CHICAGO AREA—TYPING ONLY

Chicago—Illinois Masonic Hospital Laboratory, 836 Wellington Street.

Irving Park Clinical Laboratory, 4013 Milwaukee Avenue.

Maurice I. Kaplan, M.D. Laboratory, 4010 West Madison Street.

Molay Medical Laboratories, 185 North Wabash Avenue.

The two laboratories listed below have just been approved for Kahn and gonococcus tests:

Joslyn Clinic, 1908 St. Charles Road, Maywood.

University Research Laboratory, 143 North Wabash Avenue, Chicago.

The attached is a supplementary list of newly approved pneumococcus stations.

This information is sent for publication in your Journal.

Yours very truly,
H. E. McDaniels, Ph.D.,
Co-ordinating Bacteriologist.

LABORATORIES APPROVED FOR PNEUMONIA TYPING SERVICE

Supplementary list as of December 15, 1939:

DOWNSTATE—TYPING ONLY

Belvidere—St. Joseph's Hospital, Julien Street.

Bloomington—Mennonite Hospital Laboratory, 807 North Main Street.

Bloomington—St. Joseph's Hospital, 824 West Jackson.

Elgin—Sherman Hospital Laboratory, 934 Center Street.

Normal—Brokaw Hospital Laboratory, Franklin Avenue.

Pittsfield—P. V. Dilts, M.D. Office, 101½ East Washington.

CHICAGO AREA—TYPING ONLY

Chicago—South Shore Medical Laboratory, 2937 East 79th Street.

MISSISSIPPI VALLEY MEDICAL SOCIETY 1940 ESSAY CONTEST

The Mississippi Valley Medical Society offers annually a cash prize of $100, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Rock Island, Ill., Sept. 25, 26, 27, 1940, the Society reserving the exclusive right to first publish the essay in its official publication the MISSISSIPPI VALLEY MEDICAL JOURNAL (incorporating the RADIOLOGIC REVIEW). All contributions shall not exceed 5,000 words, be typewritten in English in manuscript form, submitted in five copies and must be received not later than May 1, 1940. The winning essay of the 1939 contest appears in the Jan. 1940 issue of the MISSISSIPPI VALLEY MEDICAL JOURNAL (Quincy, Ill.) Further details may be secured from

Harold Swanberg, Secretary,
Mississippi Valley Medical Society,
209-224 W. C. U. Building, Quincy, Ill.

1940 MEETING MISSISSIPPI VALLEY MEDICAL SOCIETY, ROCK ISLAND, ILL.

The sixth annual meeting of the Mississippi Valley Medical Society will be held at the Hotel Fort Armstrong, Rock Island, Illinois, September 25, 26, 27, 1940. The meeting next fall will largely consist of practical instruction courses by well-known clinicians and promises to be the most interesting in the Society's history. The officers for 1940 (Elected Nov. 19, 1939) are as follows: President, John T. Hanna, M.D., Burlington, Ia., (Elected 1938), President-Elect, E. P. Coleman, M.D., Canton, Ill., 1st Vice-President, J. C. McKitterick, M.D., Burlington, Ia., 2nd Vice-President, C. J. White, M.D., Chicago, Ill., 3rd Vice-President, E. A. Cunningham, M.D., Louisiana, Mo., Secretary-Treasurer, Harold Swanberg, M.D., Quincy, Ill., (Re-elected).

The following were also recently elected to membership on the Board of Directors of the Society:

N. C. Barwasser, M.D., Moline Ill., E. Lee Dorsett, M.D., St. Louis, Mo., Nathan S. Davis III, M.D., Chicago, W. E. Johnson, M.D., Warrensburg, Mo., S. R. Hoover, M.D., Quincy, Ill., F. E. Sultzman, M.D., Hannibal, Mo., E. C. Kelly, M.D., Peoria, Ill., C. A. W. Zimmerman, M.D., Cape Girardeau, Mo., F. G. Norbury, M.D., Jacksonville, Ill., W. C. Goenne, M.D., Davenport, Ia., Lindon Seed, M.D., Chicago, W. A. Sternberg, Mount Pleasant, Ia.

SECOND ANNUAL CONFERENCE MIDWESTERN FORUM ON ALLERGY

Palmer House, Chicago Ill.
January 13-14, 1940

Saturday evening 7 P. M. Annual "get together," with informal discussions and demonstration.

1. Kodachrome demonstration of Allergic skin lesions.
   Leader: Dr. Sam Levine, Detroit, Mich.
2. Smut Allergy (microscope demonstration).
   Leader: Dr. F. W. Wittich, Minneapolis, Minn.
3. Drug Allergy.
   Leader: Dr. Theodore L. Squier, Milwaukee, Wis.
4. Effects of Allergy on Constitution.
   Leader: Dr. Milton Cohen, Cleveland, Ohio.
5. Nasal secretion of allergic and non-allergic types (microscope demonstration).
   Leader: Dr. French Hansel, St. Louis, Mo.

Sunday 9 A. M. Crystal Room, Palmer House.
Chairman: John Sheldon, Ann Arbor, Mich.

1. Results of Atmospheric Research during 1938-1939.
   O. C. Durham, North Chicago, Ill.
2. Mold Allergy.
   Dr. Theron G. Randolph, Milwaukee, Wis.
3. The nature of various mill dust Allergens.
   Dr. F. W. Wittich, Minneapolis, Minn.
4. Allergic Purpura.
   Drs. J. Warrick Thomas and J. R. Forsythe, Cleveland Clinic, Cleveland, Ohio.
   Discussion opened by Dr. Theodore Squier.
5. Dr. Clarence Bernstein, University of Chicago, Chicago, Ill.

Sunday noon. Luncheon Room 14, Palmer House.

Sunday 2 P. M. Crystal Room, Palmer House.
Chairman: Dr. Jonathan Forman.

1. Arthus phenomenon in relation to allergy (Lantern demonstration).
   Dr. Paul Cannon, Prof. of Pathology, University of Chicago, Chicago, Ill.
2. Physiological Studies on Histamine in Relationship to Allergy (colored movie).
   Dr. Richard Young, Northwestern University, Chicago, Ill.
3. Comparative studies on Histamine and Passive Transfer reactions in Neurological patients.
   Dr. Michael Zeller, University of Illinois, Chicago, Ill.

Monday evening: Regular meeting of Chicago Allergy Society.

A MINNESOTA COURT DECIDES AGAINST THE FRATERNAL ORDER OF EAGLES

According to Minnesota Medicine, December, 1939, in the case of Re: *Fisch et al. vs. Silvertsen, et al.* the District Court of Mower County dismissed suit against Austin physician and Fraternal Order of

Eagles against the Minnesota State Board of Medical Examiners: We quote:

"On October 21, 1939, the Honorable Norman E. Peterson, Judge of the District Court for Mower County, made an order dismissing the lawsuit instituted by Herbert Matthew Fisch, M.D., of Austin, Minnesota, and Fraternal Order of Eagles, Lookout Aerie No. 703, at Austin, Minnesota, against the Minnesota State Board of Medical Examiners. Judge Peterson ordered a stay of 40 days in order to permit the plaintiffs to appeal to the Supreme Court of Minnesota, if they so desire.

"This lawsuit was instituted by Dr. Fisch and Fraternal Order of Eagles following a hearing held by the Minnesota State Board of Medical Examiners on July 6, 1939, and following a ruling by the Honorable J. A. A. Burnquist, Attorney General of the State of Minnesota, and Mr. John A. Weeks, Assistant Attorney General, that the furnishing of medical care by the Fraternal Order of Eagles at Austin, Minnesota, is a violation of the laws of the State of Minnesota, particularly those laws relating to the practice of healing and the practice of medicine. The Attorney General also ruled that Dr. Fisch, and any other doctor, who is a party to the operation of such a plan, subjects himself to disciplinary proceedings in the form of a suspension or revocation of his license as a physician and surgeon. The purpose of the lawsuit was to obtain an injunction restraining the Minnesota State Board of Medical Examiners from interfering with the operation of the plan and from taking any steps to suspend or revoke the license held by Dr. Fisch. The lawsuit was also directed against the members of the Mower County Medical Society, but the plaintiffs dismissed their case against the Mower County Medical Society when the case was called for hearing in Court.

"The plan pursued by the Eagles Lodge at Austin, is briefly as follows: The various members of the Eagles Lodge pay $12.00 per year in dues to the local aerie or lodge. Out of this amount the sum of $4.00 per year per member is allocated for medical care and this fee is split equally between Dr. Fisch, a duly licensed physician and surgeon, and Dr. Leon C. Nicholsen, a duly licensed osteopath, irrespective of which one attends the patient. The Eagles Lodge at Austin has about 1,200 members and while the constitution of the Lodge provides for the payment of $2.00 per year per member for medical care, this figure has been increased by the local aerie. The legality of this plan was questioned by the Medical Board in 1937, following which, legal counsel for the Grand Aerie of Eagles appeared before the Board and advised the Board that despite the fact that the furnishing of medical care was advantageous to the Fraternal Order of Eagles from the standpoint of obtaining members, there were certain objectionable features to the plan, and that while they would not concede that the plan was unlawful, they would terminate the plan if they were given until June 1, 1938, in order to work out other suitable benefits for the members, such as, an increase in the cash sick benefit paid by the Aerie. The Medical Board was also assured that no new aeries would be organized in Minnesota under the old plan and accordingly, the Board passed the matter for the time being. Several of the aeries thereafter voluntarily discontinued the operation of the plan, including aeries in St. Paul and Minneapolis. However, the aerie at Austin, and in two or three other communities in Minnesota, continued to furnish medical care under such a plan, which resulted in the hearing held before the Board on July 6, this year, and the subsequent ruling by the Attorney General of Minnesota. The Supreme Court of Minnesota has ruled that neither a corporation, nor a lay person, can practice law, directly or indirectly, through the medium of employing a licensed attorney to practice law for others for the benefit or profit of the corporation or layman. The Supreme Court of Minnesota stated:

" 'We are just as firmly convinced that it is improper and contrary to statute and public policy for a corporation or lay man to practice medicine in the same way.'

"The Supreme Court of Minnesota also stated:

" 'What the law intends is that the patient shall be the patient of the licensed physician, not of a corporation or layman. The obligations and duties of the physician demand no less. There is no place for a middleman.'

"Under the ylan pursued by the Fraternal Order of Eagles the aerie physician is obligated to furnish medical care, not only to the member, but to his entire family."

VIOLATION OF THE CODE OF LEGAL ETHICS

Violation of the code of legal ethics was the charge, December 1, 1939, against the Department of Justice for attempting to influence public opinion while a case is pending in Federal court. The allegation is contained in the December 1 issue of the *New York State Journal of Medicine,* official organ of 16,700 practicing physicians of the state.

The charge is based upon the twentieth rule in the Canon of Professional Ethics of the American Bar Association, which provides that public statements by a lawyer as to pending or anticipated litigation may interfere with a fair trial in the courts and otherwise prejudice the due administration of justice.

The JOURNAL commends this rule of the ethics to the attention of Assistant Attorney General Thurman Arnold and his associates in the antitrust suit against the American Medical Associaton. "From the outset of this action," states the JOURNAL, "the Department of Justice's representatives have shown a blatant disregard of the ethical canon cited above and other rules of good legal manners.

"Charles C. Pearce, a special assistant to the U. S. Attorney General, made a public address in advance of the trial in which he spoke of 'the formula of illegal procedure . . . pursued by organized medicine' as if a verdict of guilty had already been brought in. Pretrial published statements of Mr. Pearce and others were not limited to 'quotations from the records' but, as Justice James M. Proctor observed of the indictment proper,

abounded 'in uncertain statements' and 'highly colored, argumentative discourse.'

"Since the dismissal of the indictment against the A.M.A. by the Federal District Court, Mr. Arnold and his associates have continued to try this case to the public in spite of the fact that an appeal is pending. After the District Court had thrown out the antitrust charge against he A.M.A., Mr. Arnold issued a public warning to the profession not to commit acts that the Court had just declared legal. Asking the Supreme Court to waive the usual procedure and consider the case without a previous decision by the Circuit Court of Appeals, he broadly hinted that continued medical progress depended on the success of his plea.

"In certain circumstances it is conceivable that a lawyer in the government's employ cannot be bound by the same ethical principles as attorneys in private practice. Certainly, there is nothing in the antitrust suit against the A.M.A., however (except the palpable artificiality of the charge), to account for the disregard of legal ethics that Mr. Arnold and some of his associates have displayed."

ILLINOIS STATE MEDICAL SOCIETY

Committees for Annual Meeting

Peoria—May 21, 22, 23, 1940

Committee on Arrangements

Arthur Sprenger ..... Chairman
E. E. Nystrom ..... Vice-Chairman
Harold F. Diller ..... Vice-Chairman

* * *

Officers of Peoria Medical Society

Orville E. Barbour ..... President
E. Z. Levitin ..... First Vice-President
H. A. Durkin ..... Second Vice-President
C. W. Magaret ..... Secretary & Treasurer

* * *

Reception Committee

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George W. Michell ..... Vice-Chairman

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R. A. Hanna	H. M. Sedgwick
A. L. Corcoran	J. H. Ulrich
E. Z. Levitin	G. U. Washburn
F. S. Davis	H. B. Knowles
A. H. Clark	J. T. Wead
W. A. Gott	E. E. Royce
D. H. Morton	J. W. Daugherty
Wm. Blender, Sr.	H. L. Williams
J. F. Sloan	E. H. Bradley
W. A. Borin	F. D. Loewen
T. S. Egan	J. C. Roberts
J. P. Sparks	Bruce Ryder
L. E. Monroe	H. E. Pintler
R. B. Roberts	G. C. Lewis
A. J. Foerter	P. A. Cusack
F. G. Hopkins	L. A. Burhans
A. A. Knapp	T. C. Coggeshall
C. G. Blake	W. T. Marrs
P. F. Jones	A. G. Eknoomou
J. E. Welsh	E. E. Henson
R. L. Eddington	A. S. Plummer

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Allen A. Foster ..... Vice-Chairman

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J. M. McCuskey	Victor Williams
George M. Borin	F. C. Hammitt

F. A. Christensen

* * *

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Milo T. Easton ..... Vice-Chairman

F. C. Enddres	George R. Seward
J. H. Siegfried	Chas. F. Sutton

Thomas H. Sternberg

* * *

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E. E. Nystrom ..... Chairman
C. P. Strause ..... Vice-Chairman

F. E. Fielding	George L. Cohen
W. D. Madison	Glen I. Allen

M. E. Aaberg

* * *

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C. D. Sneller ..... Vice-Chairman

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E. Z. Levitin	Hugh E. Cooper
E. E. Nystrom	Milo T. Easton

* * *

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Robert M. Sutton ..... Vice-Chairman

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R. A. Slater	B. J. Heymann
Floyd W. Castator	D. M. Ernest

* * *

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W. H. Holbrock ..... Vice-Chairman

Daniel E. Bowers	Arthur E. Baker

Robert K. Dean

* * *

Publicity Committee

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Walter Baer ..... Vice-Chairman

Leslie Rutherford	L. V. Boynton

Bryan H. Trewyn

* * *

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J. E. Meloy ..... Vice-Chairman

R. C. Dunseth	Joseph Ketay
H. W. Hawkins	Harry Costeff

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M. E. Harmeyer ..... Vice-Chairman

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Wm. Blender, Jr.	A. D. Phillips
R. M. Rutledge	Elmer W. Seaburg

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G. M. Parker — F. M. F. Meixner
Ray W. King — Maxim Pollak
J. W. Sours — Emmet D. Wall

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L. D. Whittaker — J. E. Bellas
Robert M. Sutton — E. C. Burhans
Charles D. Branch — J. H. Bacon

* * *

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William Major .....Vice-Chairman
J. F. Duane — H. A. Durkin
C. S. Turner — Fred L. Stuttle

* * *

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W. A. Hinckle.....Vice-Chairman
John R. Vonachen

* * *

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Milo T. Easton — H. M. Wilson
James D. O'Connor — Walter W. King
Fred L. Stuttle — Paul T. Palmer

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William M. Cooley, Sr.....Vice-Chairman
W. A. Michael — C. J. Heiberger
E. P. Burt — Wm. M. Cooley, Jr.
Fred S. Stahmann

* * *

PEDIATRICS COMMITTEE

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Orville E. Barbour.....Vice-Chairman
F. H. Maurer — Howard R. Miller
Carl E. Sibilsky — A. E. Cohen

* * *

SECRETARIES' CONFERENCE COMMITTEE

C. W. Magaret.....Chairman
W. A. Michael.....Vice-Chairman
John E. McCorvie

* * *

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* * *

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EDUCATIONAL AND SCIENTIFIC SERVICE COMMITTEE

Report for October, November, December, 1939

SCIENTIFIC ACTIVITIES

142 speakers were scheduled for scientific meetings.

52 different counties sponsored these programs.

Speakers were used from various sections of Illinois, from Washington and St. Louis Universities of St. Louis and from the University of Iowa Medical School.

The Committee secured all speakers for the Tri-County Medical Society, the Southern Illinois Medical Association, the North Central Illinois Medical Society.

POST GRADUATE CONFERENCES

The Committee on Post-Graduate Education and the Scientific Service Committees arranged an all day and evening clinical conference for Jacksonville in November. This meeting was attended by 117 doctors representing 45 different counties.

The program consisted of short talks by Chicago

doctors followed by discussion from downstate men. The plan proved very satisfactory.

The meeting at Champaign began in the afternoon and consisted of eleven papers, each twenty minutes in length with no discussion. This meeting was attended by 209 doctors representing 30 different counties and 65 different cities and towns.

Copies of the papers are being mimeographed and will be sent to all doctors who registered at the meeting.

The Post-Graduate Education Committee and the Educational Committee held a meeting in November with the Deans of the Chicago medical schools, the Deans of Iowa, Washington and St. Louis University Medical Schools. This meeting was very informal with each dean and each committee member expressing his ideas about what has been done and what can be done to develop post-graduate education.

The same Committee members met with representatives of the State Department of Public Health to discuss cooperation.

A new Scientific Service List of suggested speakers and subjects was printed and mailed together with a letter from the Chairman to all secretaries and presidents of county medical societies. Many compliments have been received concerning the comprehensiveness of this list.

Last fall the Committee arranged to have published in the JOURNAL each month a list of coming meetings. The list will grow as secretaries realize the importance of notifying the office of the Educational Committee of coming meeting.

AID TO COUNTY MEDICAL SOCIETIES

2,447 notices sent to doctors announcing meetings of Lawrence, Clinton, LaSalle, Hancock, Bureau, Knox, Perry, Effingham, Lee, Randolph, Monroe County Medical Societies and the North Shore Branch of the Chicago Medical Society.

This entails considerable work in the office but is being continued because of the increased attendance at some meetings. A report is being kept of meetings where speakers are scheduled by the Educational and Scientific Service Committees and while an exact attendance figure is not possible, a conservative estimate from the report cards indicates that at least 2,500 doctors attended scientific meetings in fifty-two different counties.

812 releases to Illinois newspapers regarding the clinical conferences in Jacksonville, and Champaign and the meetings of LaSalle, Clinton, Hancock, Lawrence, Effingham, Randolph, Lee and Bureau County Medical Societies.

Special publicity was given to the public meetings of the Chicago Medical Society and announcements were enclosed in all mail going from the Committee office.

NEWSPAPER SERVICE

Articles were written and approved on the following topics:

Thanksgiving 1939
Sinusitis
Tuberculosis Today
Whooping Cough Prevention
Keep Well for the Holidays
Holiday Celebrating
Cancer Control
Hiking Is Good Exercise
Keeping Fit in Winter
Tumors
Rabbit Fever or Tularemia

1,014 Health articles were sent to Illinois newspapers.
158 Health articles were sent to Chicago Newspapers.
1,651 Editorial articles were sent to newspapers.

RADIO

52 radio programs were given over Stations WGN, WJJD, WHIP, WGES, WAAF.

Copies of the programs were supplied downstate counties for rebroadcasting.

MAILING LIST

15,008 articles were sent out to the mailing list of the Committee.
131 new names were added to the mailing list, upon request.
1,596 health articles were sent to Illinois hospitals.
1,666 health articles were sent to Illinois libraries.
1,000 radio schedules were mimeographed and mailed.

SPEAKERS' BUREAU

90 appointments were made for doctors to address lay meetings.

42 meetings were downstate.

48 meetings were in Cook County.

Seven speakers were scheduled to present the annual program for the 6th District of the Illinois Federation of Women's Clubs.

Speakers were scheduled to address County Teachers' Institutes, County Home Bureaus and County Federation of Women's Clubs.

Reports on the meetings were highly satisfactory and some of them outstanding:

"Very excellent presentation. Well received and appreciated. One of the best talks of the year."

"Speaker, excellent; Subject, excellent; Group Discussion, excellent."

"A fine talk, well prepared and well received."

"I heard many compliments on this address by teachers who were present. I consider it one of the best addresses made before the 1939 Teachers' Institute."

"Subject covered in clear, concise way and has created numerous favorable impressions among teachers."

"Exactly the spring tonic that most of us need."

"This was one of the finest talks we have heard at a woman's club meeting, even a State meeting! Almost every woman came to me and told me how thoroughly they enjoyed this talk and what a pity their husbands could not have heard it."

"Excellent speaker, held audience throughout entire talk. Fine personality."

"Such an excellent and informative talk deserved a much larger attendance."

"Very good speaker and fine personality."

MISCELLANEOUS

Dr. Hutton, representing the Committee, met with a Committee of the Illinois Congress of Parents and Teachers to discuss plans for the Summer Round-Up and general cooperation between the Congress and other lay and professional groups.

The Committee has been represented at meetings of

the Maternal Welfare Committee of the State Departmnt of Public Health.

The Committee has been invited to present an exhibit at the Mid-Winter Meeting of the Chicago Dental Society at the Stevens Hotel in February.

The Secretary of the Committee was invited to talk on the work of the Speakers' Bureau of the Educational Committee before the National Board of the Woman's Auxiliary.

The Secretary was invited to address the senior students of the George Williams College, Chicago, and to tell them about the work of the Educational Committee.

The Committee cooperated with the Irving Park Y.M.C.A. in a Health Week and furnished speakers for schools and associations in that district.

Special package library material was furnished southern Illinois high school students competing in the essay contest sponsored by the Southern Illinois Medical Association. The contest took as its subject "The Family Doctor."

Package libraries on state medicine were furnished a number of Chicago bank employees participating in debates on that topic.

Letters were sent to several hundred organizations inviting them to participate in the Hall of Health for 1940.

Package libraries were furnished many doctors.

MATERNAL WELFARE ACTIVITIES

115 notices were sent for Rock Island County Medical Society announcing Clinical Conference on Maternal Welfare.

90 notices were sent for clinical conferences on Obstetrics and Pediatrics sponsored by Perry Memorial Hospital, Princeton.

75 programs were mimeographed for clinical conferences on Obstetrics and Pediatrics sponsored by Kewanee Physicians Club.

125 invitations were sent for Clinical Conferences sponsored by Kewanee Physicians Club.

77 programs were mimeographed for Obstetric and Pediatric programs sponsored by the DeKalb County Medical Society.

125 programs were mimeographed for Obstetric and Pediatric programs sponsored by the Lake County Medical Society.

520 invitations sent for Obstetric and Pediatric programs sponsored by Lake County Medical Society.

98 invitations were sent for Obstetric and Pediatric programs sponsored by Jersey-Greene County Medical Societies.

1,000 copies of Maternal Welfare Platform prepared and sent to all County Chairmen of the State Maternal Welfare Committee.

500 copies of the New Jersey Program prepared for County Chairmen of Illinois.

21 newspaper releases were sent concerning DeKalb County Medical Society Maternal Welfare Program.

51 newspaper releases were sent concerning Rock Island Clinical Conference on Obstetrics and Pediatrics.

Respectfully submitted,

Jean McArthur, Secretary.

U. S. ARMY HAS OPENINGS FOR PHYSICIANS

Opportunities for a number of young doctors who are interested in Army careers will be open early next year, Lieut. General Stanley H. Ford, commander of the Sixth Corps Area, indicated today.

The War Department has announced an examination March 18-22, 1940, both dates inclusive, for the purpose of qualifying candidates for appointment as First Lieutenants in the Medical Corps, Regular Army, to fill vacancies occurring during the remainder of the present fiscal year. Due to the expansion of the Air Corps and Coast Defenses with proportionate increase in officers of the Medical Corps, there will be considerably more than the usual number of vacancies.

The examination is open to all male graduates of acceptable medical schools in the United States and Canada who have completed one year's internship in an approved hospital and who will not be over 32 years of age at the time it will be possible to tender a commission.

The examination will be conducted by boards of medical officers convened throughout the United States and will consist of a physical examination, a written examination in professional subjects, and a determination of the candidates' adaptability for military service.

Full information and application blanks will be furnished upon request addressed to The Adjutant General, War Department, Washington, D. C. Applicants will not be considered if received in the War Department after March 2, 1940.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY EXAMINATIONS

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 15, 1940. Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates. Group A, Part II, candidates will be examined on June 8 and 9, and Group B, Part II, on June 10 and 11, 1940.

The annual dinner of the Board will be held in New York City on Wednesday evening, June 12, 1940, at the Hotel McAlpin.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6) Pa.

DR. JAMES G. CARR AWARDED 1939 MISSISSIPPI VALLEY MEDICAL SOCIETY'S DISTINGUISHED SERVICE AWARD

Dr. James Gray Carr, A.B., M.D., F.A.C.P., of Chicago, Secretary and Professor of Medicine, Northwestern University School of Medicine, was awarded the Mississippi Valley Medical Society's Distinguished Service Award for 1939 at the recent annual meeting

of the Society held at Burlington, Iowa. Dr. Carr was presented with the gold medal award and a certificate by the President of the Society, Dr. M. Pinson Neal, Prof. of Pathology, University of Missouri School of Medicine, at the annual banquet on September 28. The award is given annually to an active member of the Society for "unusual and distinguished service to the medical profession."

WOMAN'S AUXILIARY

County News

Cook. On Thursday, November 16th, 1939, the day preceding the annual meeting of the National Board, it was the pleasure of Mrs. Charles Segal, President, and the members of the Council of the Woman's Auxiliary to the Chicago Medical Society to entertain the Board of Directors of the Woman's Auxiliary to the American Medical Association at a Reception, Luncheon and Tour. The Ladies of the local Auxiliary welcomed their guests in a private dining room at the Palmer House. After formal introductions luncheon was served.

At 1:30 o'clock the party entered private automobiles to be taken to the Museum of Science and Industry in Jackson Park. When they arrived they were ushered into the auditorium where a short program had been arranged. The speakers were: Mr. Rufus Cutler Dawes, President of the Museum, Dr. William Allen Pusey, a Trustee of the Museum and Chairman of its Medical Advisory Committee, Dr. Philip Fox, Director of the Museum, Dr. Eben Carey, Curator of the Medical Science Exhibits of the Museum, and Mrs. Rollo K. Packard, President of the Woman's Auxiliary to the American Medical Association.

The Officials of the Museum arranged the specially conducted tour which followed the program. The exhibits in the Medical Science Section of the Museum will be opened to the public at an early date and will be the largest and most complete in this country.

North Side Branch. Mrs. Nelson Percy was hostess to the North Side Branch of the Woman's Auxiliary to the Chicago Medical Society November 20th. After a short business meeting, conducted by Mrs. Wm. H. Brown, President, Dr. Edward Ochsner gave an interesting talk on, "Legislation." Tea was then served.

"Our Hats are Off," to the North Side Branch for their generous donation of $125 for "Hygeia."

Will-Grundy County. Mrs. C. C. Winning, State President, addressed the Will-Grundy Auxiliary November 13th at the home of Mrs. Earl Steen, Joliet, Ill. Mrs. H. Worthley and Mrs. E. H. Kupke of Beecher, Ill., assistant hostesses, Mrs. C. V. Cohenour, President, presided.

Sangamon County. A very novel and interesting program was conducted at the home of Mrs. B. L. Stewart in Springfield, Ill., November 13th; Mrs. D. M. Sirca presided. A Round Table discussion in the form of an "Information Please" program was conducted by Mrs. Harry Otten. "Do We Need Compulsary Health Insurance in the United States?" and "The Evils of Compulsary Health Insurance" were the topics. The little book, "On the Witness Stand," by J. Weston Walch was used as authority for the discussion. Tea and Social Hour followed the program.

Coles-Cumberland County. The Woman's Auxiliary to the Coles-Cumberland County Medical Society held their November meeting at the home of Mrs. Claude Raines in Charleston, Ill. Mrs. L. A. Neal, President. Mrs. F. B. Goff of Charleston gave a talk on "Doctors' Hobbies."

Vermilion County. The Woman's Auxiliary to the Vermilion County Medical Society met November 7th. Dinner was served at the Methodist Church in Ridgefarm, Illinois. The business and social hour followed at the home of Mrs. S. M. Hubbard. Mrs. J. H. Williamson, President, conducted the business meeting.

Mrs. C. W. Stuart,
State, Press and Publicity Chairman.

INTERNATIONAL COLLEGE OF SURGEONS TO CONVENE

The United States Chapter of the International College of Surgeons will hold its Fourth Annual Assembly, February 11-14, 1940, in Venice, Florida. In addition to prominent American speakers, professors of surgery from Brazil, Canada, Cuba, Mexico, and Turkey will lecture. Scientific and technical exhibits will be displayed in the patio of the Florida Medical Center. A well-rounded social program has been planned for the visiting surgeons, their wives, and guests.

For any information, including the presentation of scientific papers or exhibits, please address Dr. Charles H. Arnold, Secretary to the Scientific Assembly, Terminal Building, Lincoln, Nebraska.

CIBA INSTALLS CARREL-LINDBERGH PERFUSION PUMP IN NEW LABORATORIES

Acting upon the decision of its exeutive board, Ciba Pharmaceutical Products, Inc., has officially notified the New York World's Fair that it would withdraw its displays from the Building of Medicine and Public Health and would not participate in next year's presentation.

During the 1939 session the Carrel-Lindbergh perfusion pump, more commonly known as the artificial heart, was operated by Ciba for the benefit of the many physicians and the public who attended the Fair. This apparatus is now installed in the laboratories recently completed in Summit, New Jersey, and will be on view to all visiting members of the medical profession.

Ciba also sponsored the exhibits on "The Heart and Circulation of the Blood" and on "The Glands of Internal Secretion." Because these subjects are uppermost in the public's mind, numerous invitations have been received from museums and institutions for the loan of these highly educational displays.

Plans are now under way to install the presentation on "The Glands of Internal Secretion" in the Hall of Public Health at the American Museum of Natural History located at Central Park West and 79th Street.

Original Articles

RADIUM TREATMENT OF CANCER OF THE CERVIX UTERI

FRANK E. SIMPSON, M.D.
Collaborators
J. ERNEST BREED, M.D.
JAMES S. THOMPSON, PH.D.
CHICAGO

In the treatment of cancer of the cervix uteri irradiation has practically taken the place of surgery except perhaps in very early adenocarcinoma. While x-rays are used by some, Graves states[1] "that radium is at the present the chief resource in the treatment of cancer of the cervix uteri," an opinion shared, we believe, by most surgeons.

Three topics will be briefly discussed—I Technic of radium treatment, II Prognosis, III Results.

TECHNIC. The technic, which must be varied to suit the conditions, will be described briefly as it has been discussed fully in previous papers.[2]

In a typical case our plan of treatment consists of the following procedures.

1. *Irradiation from the outer aspect of the cervix.*

The external os is often obscured by the growth. It is then impossible to enter the cervical canal without a good deal of traumatism to the tumor. Even if the external os can be seen, the cervical canal may be choked by the growth. We believe it is important therefore to irradiate first the outer aspect of the cervix in order to reduce the tumor so that the external os can be easily identified. Later the cervical canal can be entered without traumatism or dilatation.

The cervix is very gently exposed with a bivalve speculum the blades of which are 12 cm. and 14 cm. long respectively.

After insertion, the distal ends of the speculum are separated as widely as possible without traumatism in order to push away the rectum and bladder.

The open position of the speculum is maintained by the usual set-screw.

A gold plate, 4 mm. thick, fitted to the inner surface of the posterior blade of the speculum is inserted to protect further the rectum which is one of the most radiosensitive of all organs.

Three ports of entry are used—the 2 lateral fornices, and the end of the cervix.

The edges rather than the center of the growth should be irradiated. An applicator containing from 500 to 1000 mc. of radon, screened with 2 mm. of silver plus 5 mm. of rubber or gauze is grasped with an 8 inch forceps and placed carefully in one lateral fornix or against the end of the cervix.

In some cases, 10 mm. instead of 5 mm. of rubber or gauze is placed around the metallic screens holding the radon.

Normal tissues are packed off with gauze, which is very gently inserted around the radon applicator.

The speculum and forceps holding the radon applicator are *left in the vagina* during the irradiation which lasts from 15 to 30 minutes. In some cases, a treatment lasting 50 minutes may be given.

A double T. binder, dependent from the patient's shoulders, holds the speculum and the forceps carrying the radon securely in the vagina.

Treatments are given as office procedures—daily, on alternate days or less often depending on the case.

In a few days or weeks, depending upon the lesion, the external os if obscured comes into view and the cervical canal becomes patent.

Intrauterine irradiation is then given but only as a rule after irradiation from the outer aspect of the cervix has been completed.

2. *Intrauterine irradiation.*

The length and shape of the curve of the uterine canal are first determined with a uterine sound. As the carcinoma may extend above the internal os the whole uterine canal should be irradiated.

The radon, varying in amount from 500 to 600 mc., is contained in from 2 to 5 enameled silver radon tubes.

These silver tubes are inserted tandem into a moderately flexible lead tube of the following dimensions: length, 4 or more cm. depending on the length of the uterine canal; outside diameter, 4 mm.; wall thickness 1 mm.

A nickel cap, containing a hole for a ligature, screws into each end of the lead tube. The advantage of the lead tube is that it can be

readily bent to conform to the curve of the uterine canal and can then be inserted into the uterus as easily as a sound.

A single treatment lasting from 3 to 4 hours is given.

We published a description of the lead tubes mentioned above in 1926.[3]

Dosage. Dosage must be varied to suit the conditions present. The microscopic appearance of biopsied tissue is not a reliable guide to dosage. We give the dose which we believe the normal tissue will tolerate without seriously impairing its integrity.

In the lateral fornices and to the end of the cervix, a total dose of from 3000 to 6000 mc. hrs. may be given, depending chiefly on the distance of the radon from the tissues.

Treatments ordinarily extend over a period of 2 or 3 weeks.

In the cervico-uterine canal, a total dose of 1800 mc. hrs. may be given in one seance with a lead tube 7 cm. long, containing 600 mc. in 3 enameled silver tubes tandem. This dose should seldom if ever be exceeded. If the intrauterine lead applicator is shorter than 7 cm. the dose should be decreased.

Some of the advantages of the technic just described are:

1. *Infection* and discharge are rapidly lessened.

2. *Bleeding* is stopped or at least markedly diminished in the course of a few days. Sometimes slight bleeding persists until after the intrauterine treatment.

3. *The tumor is reduced* largely by the selective rather than the caustic action of radium so that inflammatory reaction in the cervix is not severe.

4. *Pain or distress* from the treatment is negligible or absent.

5. *Hospitalization is unnecessary,* patients as a rule remaining ambulatory and continuing their daily occupation.

6. *No mortality* is caused by procedures incident to treatment.

3. *Radium treatment of pelvic metastases.*

The pelvic girdle is practically always irradiated with the radium "bomb" to influence, if possible, metastases in the lymph nodes or elsewhere in the pelvis which may be present but undetected.

It is difficult to determine how much external surface irradiation with radium (or x-rays) improves the final result.

Some authors appear to have a good deal of confidence in transcutaneous irradiation.

Palliation may be achieved in radiosensitive cancer but the cure of deep-seated pelvic metastases by external surface irradiation has not been satisfactorily demonstrated.

Radium "puncture" of adjacent organs, the parametria or lymph nodes is futile and dangerous.

2. PROGNOSIS

The prognosis of cervical cancer under radium is influenced by a number of factors.

1. *Extent of the disease.* This is one of the most important factors affecting the prognosis.

Carcinoma that has extended widely when treatment is begun is naturally more difficult to eradicate.

A survey of all cases treated with radium throughout the world shows a rate of 20 to 30% of 5 year cures.

The percentage of 5 year cures rises rapidly if the cervix only is involved; falls rapidly if the cancer has left the boundaries of the cervix when treatment is begun.

2. *Clinical type.* The everting (papillomatous) type while more formidable in appearance is more amenable to radium than the inverting (ulcerated) or the sclerosing type.

3. *Histologic type.* Epidermoid carcinoma furnishes the greatest number of clinical cures. Cancers composed of transitional cells come next in frequency of cures.

Adenocarcinomas, which form, however, only 2 or 3 percent of the cases are the least amenable to irradiation. Anaplastic types of carcinoma are the most radiosensitive but unfortunately metastasize the most readily. Radiosensitivity is not therefore synonymous with curability.

4. *Infection.* The cancerous cervix is practically always infected. Procedures that dam up the discharge such as "plugging" the cervix with a string of radium tubes or packing the vagina with gauze for a period of many hours at the beginning of treatment may aid the spread of infection.

Proponents of the method of starting the treatment by dilating the cervix and inserting radium

tubes which are withdrawn and reinserted daily admit a 2% primary mortality from infection. Radium "puncture" of infected cervical cancer has resulted in death in a number of instances. We believe therefore both of the foregoing methods of treatment are contraindicated.

Vaginal douches for "cleaning up" infection are futile and unnecessary, the short powerful irradiations against the cervix just described being immeasurably more efficient.

5. *Metastases.* If carcinoma has metastasized when treatment is begun or if it is made to metastasize by injudicious examinations or treatment, clinical cure is unlikely.

We are opposed therefore to (a) traumatic examinations for determining the extent of the disease, (b) "pulling down" the cervix with the tenaculum forceps for biopsy or to test the mobility of the uterus, (c) partial operations, curettage, cauterizations, electrocoagulation, (d) dilatation of the cervix for biopsy or the introduction of radium tubes. Any of the foregoing procedures may easily add to the dangers of metastasis by setting free carcinoma cells in the lymph or blood stream.

6. *Hysterectomy.* Should hysterectomy be performed in apparently favorable cases with the idea of subsequent radium treatment?

If the cervix has been excised, the lack of muscular and connective tissue forming the tumor bed impairs the effectiveness of radium.

Hysterectomy itself has a certain mortality and there is a possibility that it may cause metastasis. Our experience with radium treatment after hysterectomy is not favorable.

Should hysterectomy be performed after apparent clinical cure under radium?

Surgeons appear to be opposed to this method. Graves states[4] that his "experience with this procedure is distinctly unsatisfactory."

7. *Dosage.* Dosage must be carefully adjusted to the conditions present.

The carcinomatous area may receive too little or too much radium treatment either by the application of radium tubes or by radium "puncture."

If too little treatment has been given at the outset, a reapplication of radium may not be effective.

If too much treatment has been given so that radium necrosis has been produced, further treatment is made difficult or impossible even though carcinoma may persist at the edges of the necrotic area.

8. *Anatomical conditions.* Anatomical peculiarities such as vaginal stricture prevent free access to the cervix thus rendering the application of radium more difficult.

9. *General conditions.* Syphilitic patients do not as a rule respond well to radium treatment. We have not found that valvular heart disease with decompensation is an unfavorable factor so far as the effects of radium are concerned.

3. RESULTS

Few things in medicine are more dramatic than the healing of the average cervical carcinoma under conservative radium treatment.

Usually the symptoms and signs disappear and patients gain remarkably in strength and weight. If fatalities occur from carcinoma they are due as a rule to metastasis; more rarely to the local disease. Death may be caused by uremia from pressure of metastatic deposits on the ureters.

In our series of 60 consecutive unselected cases (clinical and microscopic diagnosis) treated by the method outlined between June 1927 and June 1934, 24 (40%) have remained clinically free of carcinoma for periods of from 5 to 9 years.

In our series of 88 consecutive unselected cases (clinical and microscopic diagnosis), treated by the method outlined between June 1927 and June 1936, 40 (45.5%) have remained clinically free of carcinoma for periods of from 3 to 9 years. A more detailed report of these cases is now being prepared.

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KRAUROSIS AND LEUCOPLAKIA OF THE VULVA*

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CHICAGO

The lesions of the vulva known most broadly by the terms leucoplakia and kraurosis vulvae are of considerable clinical importance. The confusion that exists concerning these conditions arises from the fact that leucoplakia and kraurosis are considered separate entities by some while others consider them but stages of the same disease. The numerous names applied to these lesions have added to the confusion. Some of the most commonly used are: leucoplakic vulvitis; leucoplakic vulvitis and kraurosis; kraurosis; leucoplakia; chronic atrophic dermatitis; ichthyosis; leucoplasia: leucoderma; scleroma anovulaire: progressive cutaneous atrophy; trachoma; leucokeratosis; leucoplakic kraurosis; leucokraurosis: white kraurosis: leukoma; and kraurosis vulvae (leucoplacia).

The first descriptions of the type of lesion to which the name kraurosis vulvae was given were essentially clinical. Subsequent microscopical studies demonstrated a variety of findings in the vulvar skin lesions that appeared white grossly and that had been clinically diagnosed kraurosis. The multitude of names then began to appear but none yet has replaced the original and more commonly used clinical terms leucoplakia and kraurosis.

In addition, the possibility of other similar skin lesions occurring on the vulva has not been adequately considered by many authors. Ketron and Ellis[1] have discussed this. They also point out that leucoplakia may frequently be superimposed on these various vulvar lesions.

The interpretation of the exact microscopic criteria necessary for a diagnosis of leucoplakia and kraurosis varies so much that further confusion results.

In this paper I shall use the term leucoplakia to indicate lesions comparable to leucoplakia of the mouth as Montgomery, Counseller, and Craig[2] have done. The term kraurosis vulvae is used to designate those lesions that are white clinically and that possess characteristic microscopic findings. It is similar to the atrophic stage of leucoplakic vulvitis as described by Taussig[3] and to the atrophic stage of chronic atrophic dermatitis as described by Adair and Davis.[4]

The outstanding symptoms of leucoplakia and kraurosis are itching, and dyspareunia. They are insignificant in comparison with the gravity of the lesion. It is the general opinion that fifty per cent. of these lesions are associated with carcinoma.

There have been 22 instances of leucoplakia and kraurosis unaccompanied by carcinoma treated surgically at St. Luke's Hospital during the years 1924 through 1938. In this period there were 10,271 hospital admissions to the Gynecological Service. This indicates the rarity of the lesions.

A study of the series presented here revealed that most of the patients were either in the menopause or were postmenopausal. In some instances the patients were under 45 years of age but each had either a postoperative menopause, a premature menopause, or an ovarian dysfunction. The youngest patient, who had been castrated surgically four years prior to the diagnosis, was 36 years of age. The reports in the literature indicate that the average age is approximately 50 years, which is consistent with the average age of the group reported here.

The etiology is still obscure, but the fact that in almost all instances ovarian dysfunction or ovarian atrophy is associated suggests the importance of the endocrines. Since the skin of the vulva is more readily influenced by ovarian secretions than is the skin elsewhere, it is reasoned that the strict localization of the lesion to the vulva further indicates the importance of the endocrines. Infection, trauma, and irritating vaginal secretions also may play a part. In a few instances syphilis has been considered the direct cause. Swift[5] has described a series of lesions that were associated with a vitamin A deficiency. The vitamin deficiency, he stated, was not due to an absence of the vitamin, but rather to an absence of the hydrochloric acid in the stomach which resulted in failure of utilization of the vitamin. Unfortunately the author

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has little microscopic evidence to indicate the changes before and after treatment. The consideration of a vitamin deficiency is, however, worthy of consideration in spite of the fact that four of the patients here reported were examined for achlorhydria and were found normal. A neurogenic origin has also been suggested.

KRAUROSIS VULVAE

Kraurosis vulvae occurs most frequently in the region of the clitoris, labia minora, perineum, about the anus, and labia majora. Montgomery, Counsellor, and Craig[2] stated that involvement of the outer labial surfaces and the inner surfaces of the thighs indicated secondary pruritus with lichenification rather than kraurosis. Several instances in this report, however, evidenced kraurosis extending onto the thighs. Microscopic examination of the resected tissues demonstrated this. This lesion is white and the tissue appears shrunken and thin. Fissures and ulcerations occur frequently. In some instances edema may produce a thickened skin. The microscopic characteristics are hyperkeratosis, atrophy of the prickle cell layer with a marked thinning of the epithelial layer, obliteration of the rete pegs, edema, inflammatory reaction in the corium, disruption of the elastic tissue, and the development of a layer of collagenous material immediately beneath the epidermis (fig. 5). The presence of lymphocytes in the epidermis has been noted repeatedly and was found in the specimens studied here. The marked irregularity of the basal layer is also consistently present.

Microscopic studies have demonstrated that all atrophic lesions of the vulva with shrinkage as observed grossly are not the same lesions and thus cannot all be classified as kraurosis vulvae. Senile atrophy is one of these. In some instances of post-menopausal atrophy of the vulvar tissues shrinkage and subepithelial fibrosis associated with marked thinning and flattening of the epidermis are found. In many there is a slight subepithelial inflammatory reaction which is not strictly abnormal. This is called kraurosis by some. A few other conditions that may be confused are white spot scleroderma, lichen planus, and lichen sclerosis and atrophicus. Photomicrographs of white spot scleroderma presented by Ketron and Ellis[1] show marked similarity to the microscopic findings in kraurosis vulvae.

The sequence of pathological events that lead to the terminal stage of kraurosis vulvae have been variously described. The interpretation of the sequence necessarily depends upon each author's conception of the term kraurosis. Taussig,[3] for instance, using the term leucoplakic vulvitis, described in the atrophic stage a lesion identical to that recorded above as kraurosis vulvae. It is preceded by a hypertrophic stage, he stated, which is identical to leucoplakia. Montgomery, Counsellor, and Craig[2] considered leucoplakia and kraurosis as separate clinical entities. Under the term kraurosis vulvae, however, they described a hypertrophic stage which they stated might be indistinguishable from leucoplakia. Many authors do not accept the conclusion that kraurosis is always preceded by a hypertrophic stage. Since the hypertrophic stage (leucoplakia) and the atrophic stage (kraurosis) are found together so frequently in the same specimen, efforts have been made by most authors to arrange them into proper sequence. Not all tissues evidence the two simultaneously, however. When only the atrophic findings were present, many concluded that the hypertrophic stage which had been present in an earlier stage of the disease had become involved in the atrophic changes and had disappeared. When only the hypertrophic changes were noted, it was thought that the disease had not progressed far enough for the atrophic changes to have manifested themselves. Such statements cannot be denied conclusively since in most specimens previous or subsequent microscopic examinations of identical portions of vulvar skin have not been made. Certain tissues, such as the following specimen, strongly suggest that hypertrophic epithelial changes do not always precede kraurosis. In one microscopic section of this specimen several changes are observed. Figure 1 shows simple senile atrophy. The epidermis is thin, the rete pegs are flattened, there is little hyperkeratosis, and in the corium there is an increased fibrosis and decrease in the number of blood vessels immediately beneath the epidermis. Figure 2 shows many chronic inflammatory cells in the corium. In an adjacent microscopic field there is edema (fig. 3). The edema, located subjacent to the epidermis, separates this structure from the underlying connective tissue of the corium. In Figure 4 the region in which edema was noted in Figure 3 is

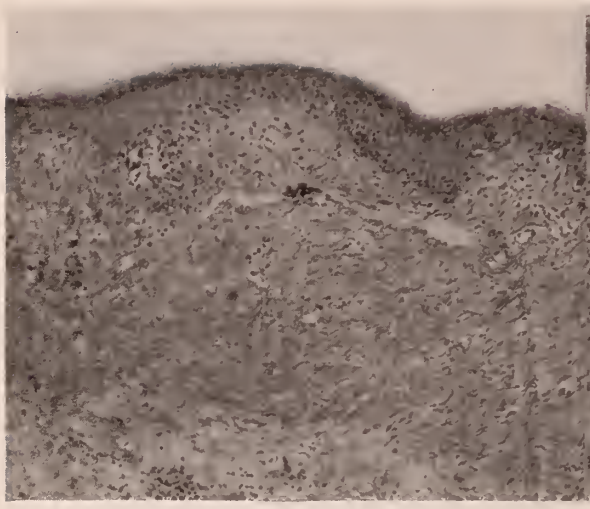


Fig. 1. Senile atrophy of vulva in region of labia minora.

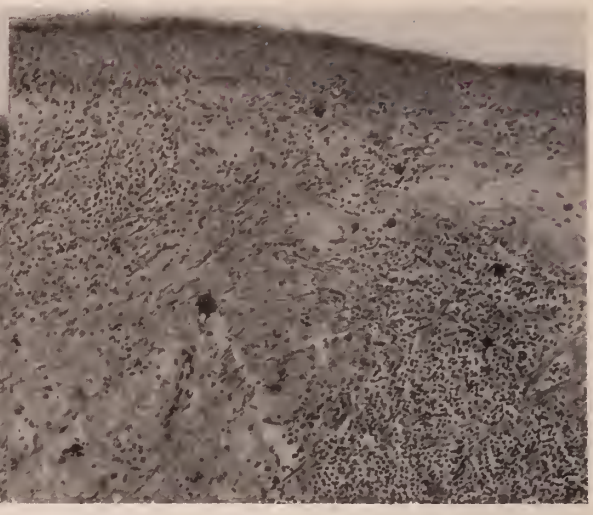


Fig. 2. Senile atrophy with inflammatory reaction in corium. Same microscopic section as shown in figure 1.

occupied by a relatively acellular, homogeneously stained mass of collagenous material. The inflammatory cells are grouped beneath this latter layer. Figure 5 shows the terminal stage of this lesion in the same microscopic section. In no portion in this specimen are there any hypertrophic changes. It is suggested that following senile atrophy, infection, edema, disruption of the elastic tissue, and marked changes in the collagen fibres may occur without any active response (hypertrophy) of the epithelium.

It seems probable that the initial pathological change in kraurosis occurs in the corium. Taussig,[6] using the term leucoplakic vulvitis, noted the first change in the elastic tissue of the papillae of the corium. In the several forms of scleroderma that resemble kraurosis, of which white spot disease is one, it has been accepted that the earliest changes do occur in the corium (Ketron and Ellis[1]).

LEUCOPLAKIA

Leucoplakia is variously described as a grey, blue, grey-white, or white lesion of the vulva involving similar regions as noted above. The skin



Fig. 3. Marked edema in corium subjacent to epidermis on some hyperkeratosis. Same microscopic section as shown in figure 1.

Fig. 4. Same section as shown in previous figures. Homogenously stained layer of collagen material occupies the region in which edema was noted in figure 3. A chronic inflammatory reaction is present. The hyperkeratosis is increased.

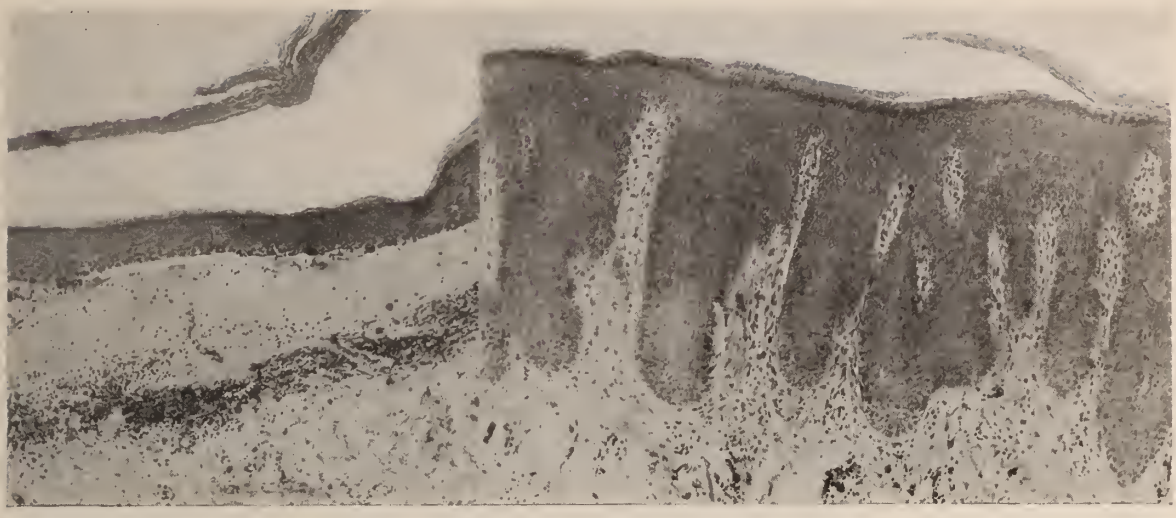


Fig. 5. Kraurosis vulvae. Same specimen as the previous figures.

Fig. 6. Leucoplakia of vulva. Clinically this lesion appeared grey in color.

appears thickened. Fissures and ulcerations also occur. Microscopically there is some hyperkeratosis, acanthosis, thickened stratum granulosum, normal basal layer, and a chronic inflammatory process just beneath the epidermis. The elastic tissue may be disrupted and edema may be present. An essential feature of this change is that the individual cells and their general arrangement in layers are relatively normal. The color of these lesions has been attributed to the hyperkeratosis by some and by others to the loss of pigment in the basal layer.

The microscopic characteristics are similar to those described by Taussig[3] in the hypertrophic stage of leucoplakic vulvitis and by Adair and Davis[4] in the hypertrophic stage of chronic atrophic dermatitis. In figure 6 the rete pegs are elongated and the prickle cell layer is increased in thickness. There is an hyperkeratosis. Inflammatory cells are located in the corium, many of which in the deeper structures are perivascular. Some regions in this specimen contain edema and in places disruption of the connective tissue stroma is noted. In the connective tissue papillae there is a diminution of elastic fibres.

Many instances of such hypertrophy of the epidermis of the vulvar skin are noted. In one of the specimens studied here (fig. 7) marked hypertrophy is noted at the site of a fissure about which there is a marked inflammatory reaction. Elsewhere in this tissue the skin is normal. The individual epithelial cells all appear normal and bear a relatively normal relationship to one another. It is believed that this local reaction on the part of the epithelium is in response to an inflammatory lesion of the vulva which existed previously. All the criteria are present for the diagnosis of leucoplakia except the hyperkeratosis which from a study of the many specimens is shown to vary markedly. Taussig[6] stated that there may be relatively little hyperkeratosis early in this disease but that in the later stages it is abundant.

In another specimen obtained from a patient with an acute cellulitis of the vulva there are leucoplakic changes that involve a larger portion of the epidermis. There is little hyperkeratosis. Following regression of the acute inflammation the skin returned to normal. Such specimens indicate that leucoplakia may develop in association

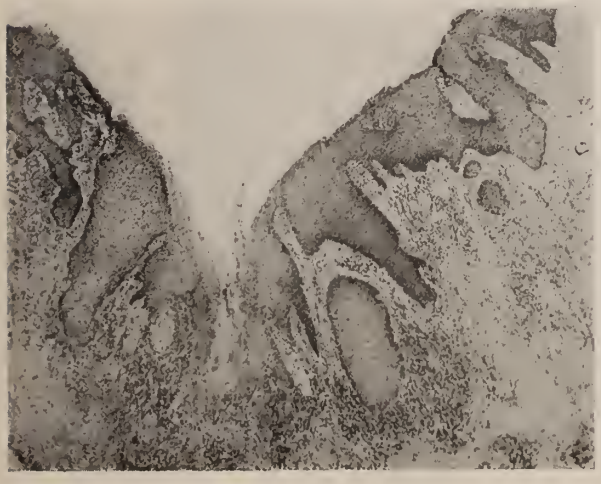


Fig. 7. Leucoplakia of vulva at site of a fissure. Clinically this appeared white.

with inflammatory reactions in a manner as suggested by Broders.[7] He stated that the epithelial hypertrophy and hyperkeratosis were only a defense reaction on the part of the skin. These specimens also bring out the fact that leucoplakia may develop and regress in many instances without associated atrophic lesions. Additional conclusive evidence that leucoplakic changes may be unaccompanied by atrophic lesions is obtained from those instances in which leucoplakia and carcinoma are found in the same specimen.

In one specimen that demonstrates a typical atrophic lesion there are a few isolated regions of hypertrophy which have the appearance of having undergone partial regression (fig. 8). The rete pegs are irregular, partially fragmented, short, and thin. The epidermis is thickened, there is marked hyperkeratosis, and the keratohyalin granules are increased. At the left the atrophic changes are more marked. It cannot be definitely stated, of course, that this is an instance of leucoplakia superimposed on kraurosis but the possibility remains.

It has been repeatedly noted by Ketron and Ellis[1] and others that leucoplakic changes are frequently superimposed on various lesions of the skin. Although Taussig[6] describes an epithelial hypertrophy as the first stage of leucoplakic vulvitis, he states that the first changes in leucoplakic vulvitis are to be found in the connective tissue papillae of the corium as noted above. Thus, it is possible in the instances cited by Taussig[6] that the original changes in the corium bring about associated changes in the epithelium that take the form of hypertrophy. The two changes then occur fundamentally together and develop simultaneously. The regressive atrophic changes take place slowly, as a rule, so that in the early phase the hypertrophic changes are more outstanding. In the later phases, however, atrophy is the predominate finding, as might be expected, and as figure 5 demonstrates.

A hypertrophic change that is occasionally noted is exemplified at the lateral edges of figure 9. Here there is some hyperkeratosis and marked acanthosis. There are marked changes in the prickle cell layer. The cells evidence numerous mitotic divisions. The nuclei, which stain deeply, vary considerably in size. There is no evidence of any prickle processes. When compared to the leucoplakic changes noted above, it is observed that there is a complete disassociation of cell layers in the epidermis and the cells do not have the normal relationship one to another. The arrangement of the basal layer is in places normal and in other places entirely absent. A small carcinoma is located in the central portion at the site of a fissure.

Identical findings to these were observed in a specimen removed for recurrent leucoplakia with

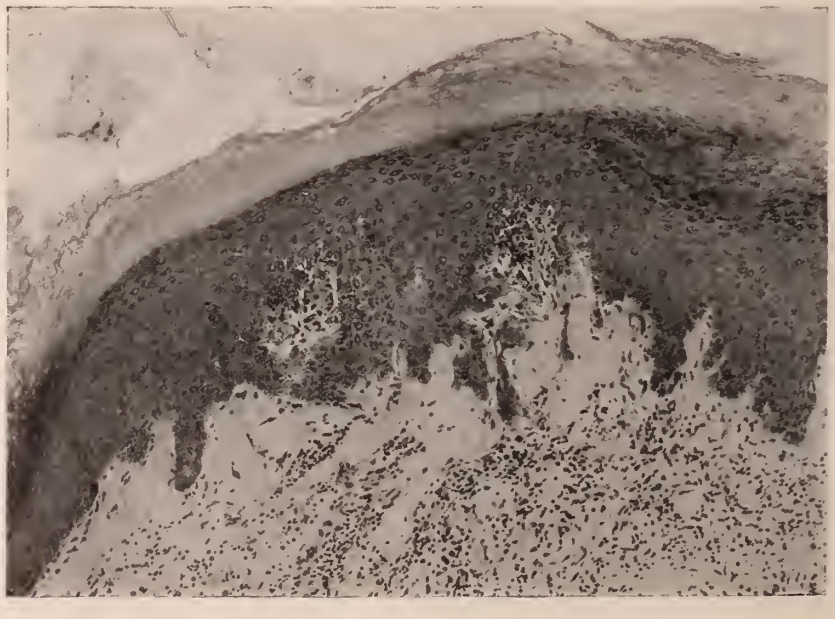


Fig. 8. Kraurosis at the left. Regressing leucoplakic changes and collagenous material deposits in the remainder of the picture.



Fig. 9. Thickening of entire epidermis with marked changes in the epithelial cells at either end of the photomicrograph. Small carcinoma in the center at the site of a fissure.

fissuring in a patient who had previously had a vulvectomy and gland resection for carcinoma of the vulva. No definite carcinoma was found in this tissue. That these marked alterations in the epithelium are early malignant changes cannot be stated with certainty. The reaction, however, is considerably different from that noted in simple leucoplakia. That carcinoma of the vulva is associated with kraurosis and leucoplakia must be accepted. Taussig[6] reported sixty per cent. in association with the hypertrophic stage and forty per cent. with the atrophic stage of leucoplakic vulvitis.

These facts immediately suggest that adequate treatment must be instituted for those lesions of the vulva described in this paper as leucoplakia and kraurosis. Many types of treatment have been suggested. Learmonth, Montgomery and Counsellor[8] and Montgomery, Counsellor and Craig[2] have sectioned the pudendal, perineal, and other nerves of the vulva and reported good results. Swift[5] reported marked improvement with hydrochloric acid and vitamine A therapy. Ovarian hormones have been said to bring about improvement temporarily, at least. Ointments and various local medicaments have been suggested. Radium and x-ray are not considered efficacious. Vulvectomy, partial or complete, is the most widely used.

In evaluation of the choice of procedure, one fact should remain in mind. This is that leucoplakic vulvitis is associated with carcinoma in fifty per cent. of instances (Taussig[6]). The procedure that most adequately and permanently cares for this situation is a complete vulvectomy. All these lesions observed at our institution are treated by partial or complete vulvectomy. The number of patients reported here represent all patients who were observed and diagnosed as such and who consented to operation. While it is stated that endocrine therapy, nerve resection, and other local treatments may bring about improvement, it is believed that such improvement is only temporary and that it is fundamentally a symptomatic one on the part of the patient. It seems unwise at the present time to employ such therapy in the lesions that in fifty per cent. of instances are associated with carcinoma. Those lesions about the anus and perineum may require planning of the line of incision. Prognosis following complete vulvectomy is excellent as far as the development of carcinoma at the site of leucoplakic vulvitis is concerned.

CONCLUSIONS

1. The terms kraurosis vulvae and leucoplakia as used here are defined.

2. Kraurosis may occur as a clinical entity or it may be associated with leucoplakic change.

3. Leucoplakia may occur independently of kraurosis in such lesions as inflammations of the vulva and carcinoma.

4. Leucoplakia is frequently associated simultaneously with kraurosis. Since Taussig[6] and others believe the initial changes in kraurosis occur in the corium, leucoplakia is probably superimposed on the kraurosis.

5. Vulvectomy is the procedure of choice in treatment of kraurosis vulvae and leucoplakia.

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DISCUSSION

Dr. Howard S. Holloway, Evanston: It occurred to me that perhaps some of the members of this group may not be quite so familiar with some of these conditions and might have some trouble in diagnosing them. There are certain conditions which are every bit as frequent as leukoplakia and kraurosis and which resemble these two conditions. One of these is the so-called leukoderma, particularly associated with atrophic changes occurring at the menopause; this may present and does present a whitish discoloration or lack of pigment in the skin which may be mistaken for leukoplakia of the vulva, the characertistics of which are local smoothness, no thickening of the skin and it is usually found simply as an accidental finding in women who have undergone atrophic changes during the menopause.

There is a condition called neuroderma which causes marked pruritus vulvae. This, due to the irritation and constant scratching and itching, can produce thickening of the skin layers, causing some hyperkeratosis which will cause the tissues to look somewhat pale in color and grayish. It can be differentiated from kraurosis only by the fact that one does not find as much thickening of the skin and retraction of the labia and sometimes of the introitus. Microscopically, outside of the possibility of some hyperkeratosis, the epithelium and elastic fibers are unchanged.

There is another condition, called lichen planus which may be present at the menopausal age, showing particularly an atrophy of the vulva in which there are papules and small areas of whitish roughening which may coalesce and together cover the exact location of the leukoplakic vulvitis with atrophic changes and retraction of the labia minora and narrowing of the introitus; but it does not present the same amount of thickening as the kraurosis, which is indicative that the connective tissue and elastic fibers have not undergone any change. In this condition there is a hyperkeratosis resembling that of kraurosis. One is liable to find lichen planus other places on the body.

Chronic eczema of the vulva, particularly in women undergoing the menopausal changes with normal atrophy of the vulva and narrowing of the introitus, may simulate this condition. However, there is not quite as much retraction of the labia and the lesions are apt to be in the folds of the labia and crevices between the labia, thighs and gluteal folds.

There is a condition called lepidosis which is similar to kraurosis. The difference between that and kraurosis is that the labia minora are pendulant and swollen and show no retraction.

In the hypertrophic stage of the chronic atrophic dermatitis of Adair and Davis with acute symptoms of swelling, redness and ulceration, one finds a condition which may simulate that of our monilia, trichomonas and certain streptococcic infections. In the primary stage marked swelling and edema take place as well as itching, burning, dyspareunia, irritation, ulceration and fissure formation. Usually there is marked discharge which calls attention to the fact that there is a vaginitis. But there may not be any discharge at all so one must examine the vaginal tract carefully for the possibility of bacterial, monilia and trichomonas infections.

In closing I want to commend Dr. Brewer on his very excellent and beautiful slides.

Dr. John I. Brewer, Chicago (in closing): I just want to add that treatment of carcinoma of the vulva is complete vulvectomy and bilateral resection of the inguinal and femoral glands.

THE DIAGNOSIS OF BACKACHE

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It is difficult to understand the etiological factors relating to all cases of backache. At times the cause is obvious but more often it is obscure. Although in some it may be impossible to make an exact diagnosis we believe that in most cases it is possible to place a given case in one of several great groups. It is my purpose to suggest a procedure for the classification of backache from an etiological standpoint. Inasmuch as it would be impossible to discuss each of these groups in detail I shall only mention those with which we are most familiar and devote the remainder of the paper to backache due to more obscure causes.

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Read before Section on Medicine, Illinois State Medical Society, Rockford, May 2, 1939.

All are aware of the fact that certain systemic diseases may be associated with backache. Prominent among these are disturbances of the central nervous system and of the urinary tract. Attention to the patient's story combined with a routine physical examination will usually indicate whether further diagnostic efforts in this direction are necessary. In a consideration of the genital tract, tumors and inflammatory lesions of the pelvis may be exciting causes but simple displacements of the uterus are no longer considered as important etiological factors in the production of backache. Investigation of the pelvis should include examination of the terminal colon, the prostate gland and the ligaments and muscles which form the floor of the pelvis. Consideration should also be given to the primary or metastatic malignancies and to such specific infectious diseases as syphilis, tuberculosis and smallpox. The cold abscess of Pott's disease and the prodromal backache of smallpox are excellent examples of conditions easily overlooked in evaluating the causes for back pain.

The systemic diseases are, however, not the most common cause of low-back pain. A large percentage of persons complaining of backache have no demonstrable systemic disease and are in most instances completely well except for this one complaint. Some of these individuals have constant backache while others have only intermittent pains. Many fall into the hands of the cultists presumably because of dissatisfaction with the methods employed by medical practitioners.

The paucity of knowledge concerning the mechanics involved in the maintenance of equilibrium is in part responsible for our failure to understand these cases. From the knowledge we do have there can be no doubt but that soft tissue changes in the form of sprains, strains and lacerations with resulting muscle spasm or ischemia are the principal underlying causes in most instances. Important conditions which lead to these changes are trauma, congenital malformations and the arthritides. Most of the cases can be satisfactorily included within one or more of these three groups.

Trauma may be divided into the acute and chronic types. Under the former would be included fractures, dislocations, sprains and the common lesions encountered by industrial surgeons. Compression injuries resulting in collapse of intervertebral discs with subsequent root pains also fall within this group. Chronic trauma is without question a potent cause for backache. Mechanical changes induced by obesity, pregnancy and multiparity are responsible for most of the cases seen in women. These changes are principally at the expense of the muscles and ligaments of the spine and pelvis and as such are not demonstrable by x-ray, but can be detected by a careful physical examination of the back which should include inspection and palpation in the upright position. Occupational strains such as may be seen in mail carriers, miners and laborers are other examples of the effect of chronic trauma.

Congenital deformities of the lumbar spine are quite common. Most of these are asymptomatic and in many cases cannot in themselves be accepted as a cause for backache. It is our belief, however, that spines showing congenital malformations are more susceptible to soft tissue damage and are injured by lesser degrees of strain than are normal vertebral columns.

Arthritis of the spine may be subdivided into atrophic or rheumatoid and hypertrophic or osteo-arthritis. Atrophic arthritis, here as elsewhere, primarily affects the periarticular soft tissues and in the spine is confined to the smaller posterior and sacro-iliac joints. We are of the opinion that isolated atrophic arthritis of the spine and particularly of the sacro-iliac joints is relatively uncommon and that such diagnoses are often made for lack of a better explanation for the complaint. The condition known as spondylitis ankylopoietica or Marie-Strüempell disease in which the ligaments of the spine become calcified as part of the ankylosing process is a manifestation of atrophic arthritis and should therefore be included within this group.

Hypertrophic arthritis of the small joints is difficult to demonstrate while that of the sacro-iliac joints in the aged is relatively common although the latter is probably not a frequent cause of backache. Inasmuch as no joints are involved, osteophytic lipping of the vertebrae cannot correctly be termed arthritis. The spicules seen on vertebrae of persons past middle age are best regarded as degenerative or senescent changes, having no relationship to infection and being only remotely associated with backache.

COMMENT

According to the plan submitted, most backache not due to one of the systemic diseases, is either on a traumatic or an arthritic basis. The congenital malformations as such are rarely responsible for pain and are in reality dependent upon some form of trauma to initiate disturbances which lead to backache. Such disturbances may be minimal degrees of strain which would hardly be expected to cripple the normal spine, for example: a sixteen-year-old girl complained of backache only when her dancing partner held her firmly enough to force her into a lordotic position. Examination of her spine revealed a severe spondylolisthesis of which she had never previously been aware. In the absence of a history of acute trauma this child should have been and was suspected of having a congenital deformity as the basis for her complaint.

As mentioned earlier, pregnancy, obesity and particularly the combination of obesity and multiparity are responsible for the majority of cases of low-back pain in women. Examination of the hypertrophied and often tender erector spinae muscles in such individuals offers convincing evidence that they represent the source of the pain and that the etiological factor is soft tissue rather than bony strain. Occasionally x-ray films in such individuals will show a hitherto unsuspected destruction of the intervertebral disc. Some will recall accidents which may have been responsible for the injury but in many no such history is obtainable.

Except for Marie-Strümpell disease, isolated atrophic or infectious arthritis of the spine is relatively rare. Backache in the presence of generalized atrophic arthritis should obviously be regarded as being due to the same disease process as elsewhere in the body, unless evidence to the contrary is available.

TREATMENT

The best treatment for low-back pain is a good diagnosis. If one is able to classify any given case within one or more of the groups mentioned, the plan of procedure becomes simplified.

Arthritis of the spine is treated as elsewhere in the body. Marie-Strümpell disease is particularly resistant to treatment but is fortunately relatively uncommon.

Osteophytic lipping of the vertebrae requires no treatment while hypertrophic arthritis of the spine being senescent in character must be managed symptomatically.

The cases associated with congenital deformities frequently respond to rigid or semi-rigid supports in the form of casts, corsets or the various types of spine braces.

The treatment of acute injuries to the spine is not within the scope of this paper.

Weight reduction, the correction of pronated feet and the elimination of possible occupational causes will relieve most of the backaches due to chronic trauma which are so common to middle-aged women.

Physiotherapeutic methods are useful in practically all types of backache, and manipulative measures will at times give startling results. When conservative measures fail to produce the desired results, surgical intervention is necessary but fusion operations are required only in a relatively small percentage of cases.

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DISCUSSION

Dr. James Stack, Chicago: I wish to thank Dr. Lang for his complete discussion of all the possibilities, and it is my purpose to enlarge upon a few of the causes of backache with which you and I are familiar.

We will take the example of the thirty-five or forty year old man who goes out on the sidewalk after the first snow of the winter and with a shovel bends over, takes a shovel full of snow, tries to get up and cannot, falls down, is carried into the house and cannot move, and possibly needs morphine for his pain. What happens to him?

The answer is not clear. I have never heard a good explanation, and the reason is that these patients never die of this syndrome. They never need to be operated upon for this acute condition, so we are still at a loss to say whether it is the fascial strain or muscle strain, whether acute traumatic synovitis with possible tear in the joint capsule, or whether a partial or complete dislocation of the lumbosacral facet has occurred. It is clear to me that such a thing is possible, although not common.

Manipulation cannot possibly cure any torn structures but can relieve a true dislocation. Certainly we must consider that as one of the lesser possibilities in this instance.

Another thing which is brought to mind by Dr. Lang's paper is that most of these things that occur in the low back are not sacro-iliac. You hear so much about the sacro-iliac joint and hear people say their sacro-iliac joint slipped. In nine cases out of ten it is not the sacro-iliac. That is a strong, stable, architecturally good joint. It is the lumbosacral, the two facets as big as your thumb nail, architecturally poor,

bearing all the weight of the body from the waist up, at a bad angle from the mechanical standpoint. In most of the cases it is lumbosacral, and the plan of treatment at first is rest, of course.

All these people cannot go to bed and rest with a pillow under the spine and heat to the spine. They have to go to work, and the best way is to see that their spine is properly supported. The easiest and best way to suport the lumbar spine and lumbosacral joint for a few days is by means of adhesive strapping, properly applied. It is a difficult job at best to put something on the outside of the back to make it do a job of something on the inside, but adhesive is the thing that for a short period will do the best work that can be done.

For true lumbosacral pain the proper method of strapping the back with adhesive is to attempt to join the pelvis to the lower part of the thorax to get the two fixed points, so that the part of the spine in between cannot be moved or, at least, cannot be moved very much. Flexion from then on will not take place in the movable lumbar spine but will take place between the pelvis and hip joint. So strapping the back around the upper part of the buttocks or around the waist is not a good method in such cases. The strap should be put on both horizontally and diagonally so that the lower chest and pelvis are united by this mass of adhesive, and it should also be put on beginning from right to left the first time, then left to right, etc., so that too much skin tension is not brought on one side of the abdominal wall. We have seen cases, and undoubtedly you have, in which actual skin blisters, beginning skin necroses, have occurred over the anterior-superior spine when strapping was put on and drawn tightly off from one side to the other.

That, in our opinion, is one of the most common forms of backache, and one that can be treated very successfully by very simple methods.

In connection with the trauma that Dr. Lang spoke of in reference to pregnant or multiparous women, and the backache they have after childbirth, we have an expression for this in our group. We speak of it as the young mother's back. We will take, for example, a slender girl who has never before been pregnant. The muscles and ligaments are subjected to this additional weight. She gives birth to the baby and the abdominal muscles are not given time to return to normal function. She begins to lift the baby in the wrong way without bending the knees and taking the baby at the long arm of the lever, putting all the strain possible on this poor weak lumbosacral joint. We find that frequently to be the case and with a little cooperation and rest they will get well.

Congenital deformities, spoken of by Dr. Lang, are at the bottom of many cases of chronic or acute trauma. Spondolisthesis is one of the most common forms. Any time a congenital deformity of the back, excepting possibly spina bifida occulta, is seen, you can be quite certain that back is prone to injury. It will not stand quite such effort or quite as much work as the back that is perfectly normal. Maybe they will go along for ten or twenty years but somehow or other they will have trouble which the normal person will not have.

Dr. Lang omitted one form of arthritis which we feel is important, that is the one caused by gout. In our experience we see little of the classic picture of the inflamed big toe. We think we see many forms of backache in individuals with the blood serum uric acid of 4.5 or 5 who will get well when given some rest and low protein diet. Possibly one may add to that some atophen or some of the other things known to be good for gout.

To me the encouraging thing about the whole back problem is that, given time and attention and given a good diagnosis, most of them will get well with patience and the usual forms of palliative treatment. In our experience less than one-half of one per cent. of the people who come in with backache are subjected to surgery of the spine.

SURGICAL TECHNIQUE FOR REPAIR OF EXTENSIVE VESICO-VAGINAL FISTULA, FOLLOWING TOTAL HYSTERECTOMY

EMIL JONAS, M.D., AND ANDREW DICK, M.D.
CHICAGO

Repair of vesico-vaginal fistula following total hysterectomy is a difficult surgical problem and the technique is entirely different from that used when the uterus is still present. The changed anatomy and physiology of the bladder and surrounding tissue following total hysterectomy should be considered and the operation should be chosen accordingly, to fit the type of fistula present. When the uterus is still in place we have the protective support of the uterus and vesico-uterine ligaments against the intra-abdominal pressure which naturally tends to cause downward displacement of the bladder especially in cases of relaxed perineum. After total hysterectomy this protective support is gone and displacement of the bladder occurs sooner or later. Unless the changed position of the bladder is corrected to normal or nearly normal, repair of the fistula will be unsuccessful regardless of the surgical technique or type of suture material used in the repair. This belief of ours formed, supported and borne out by the following case.

Report of a case. Mrs. M., a white female, thirty-nine years of age was admitted to St. Joseph's Hospital with a history of a vesico-vaginal fistula of twelve years' standing following total hysterectomy, which had been performed for some sort of uterine tumor. Patient noticed immediately following the operation that urine was being passed through the vagina and she had

no control of it. According to her own statement forty-seven unsuccessful attempts had been made by different surgeons at different hospitals to correct this condition.

On admission a physical examination was essentially negative except for an extensive vesico-vaginal fistula. Vaginal examination revealed a fistula opening the size of a nickel at the border of the anterior-posterior vaginal wall at the former place of the cervix. Urine was flowing constantly through this opening. The mouth of the fistula admitted a bent finger into the bladder and this examination revealed not only a fistulous opening fixed to the surrounding tissue by massive scar tissue but a diverticulum like part of the bladder which led down between the posterior vaginal wall and rectum. Fig. 2. We know now that we were not dealing merely with a large vesico-vaginal fistula but also with an extensive pocket formation of the bladder extending from the rectum almost to the skin of the perineum. This easily could have been mistaken for a rectocele.

Keeping this in mind we planned the operation so as to prevent mistakes and assure success. This procedure could be used in any other fistula of this type after proper preoperative treatment. The operation was performed under general anesthesia.

OPERATION: The anterior vaginal wall was split in the midline from the anterior edge of the fistula towards the urethral orifice and the posterior vaginal wall from the posterior edge of the fistula down to the perineum. The incision was now carried all around the fistula itself and then the vaginal wall was dissected laterally at both sides. The opening in the bladder and the pocket of the bladder adhering to the



Fig. 1. Showing vesico-vaginal fistula after total hysterectomy.

anterior wall of the rectum were exposed by this procedure. This pocket formation in the bladder could have easily been mistaken for a rectocele. The pocket was freed on all sides and pushed up as high as possible. The mobilization of the neck of the fistula followed by the dissection of massive scar tissue surrounding it was a rather difficult part of the operation due to so many previous operations. However, injury near the edge of the fistula is unimportant because there is a large part of the bladder free with which we could easily make an inversion and closure. After complete mobilization of the fistula, it was inverted into the bladder, using two layers of interrupted catgut



Fig. 2. Showing changing position of bladder, with posterior wall of the bladder slipping between posterior vaginal wall and anterior wall of the rectum, due to abdominal pressure.

sutures and the opening then closed. The most important step now is to insure that the pocket of the bladder does not again slip downward between the posterior vaginal wall and the rectum, causing a potential sac, retention of urine and tension on sutures. Therefore, we sutured the posterior vaginal wall to the anterior rectal fascia, and the anterior vaginal wall to the cut edges of the posterior vaginal wall which had partially surrounded the fistula. Besides this, we performed a regular cystocele operation by inverting the bladder with interrupted sutures which were placed in a transverse direction in the bladder fascia for the purpose of correcting the prolapse. The operation was finished by uniting the cut edges of the midline incision of the anterior and posteriar vaginal wall with interrupted catgut sutures. The shortness of the vaginal wall was quite noticeable when the operation was finished. A retention catheter was used for twenty-four hours. After proper postoperative management, the fistula healed completely, without any complications, within fourteen days.

COMMENT

It is well known that the bladder in females has a tendency to displace itself downward, due to intra-abdominal pressure, even when the uterus is present, when there is a relaxed perineum thus forming a so-called cystocele. After the uterus has been removed, the downward displacement of the bladder into the vagina begins and grows more marked as time goes on. The degree of the prolapse depends upon the strength of the

perineal floor, whether or not it is able to withstand the intra-abdominal pressure. In case of a vesico-vaginal fistula following total hysterectomy, the same physical forces are present, except that around the edges of the fistula massive scar tissue develops and acts to prevent the lower part of the bladder prolapsing into the vagina itself. The anterior wall of the bladder is partly fixed to the anterior and posterior vaginal wall around the fistula. The intra-abdominal pressure is constantly falling on the bladder, causing the movable upper posterior vaginal wall to bury itself between the posterior vaginal wall and the rectum thus bringing about downward displacement of a large part of the posterior wall of the bladder and possibly a smaller part of the anterior wall of the bladder forming a diverticulum-like pocket. If this condition is already present, one can see that the entire amount of urine will accumulate in this diverticulum-like part of the bladder and, when this is filled to the level of the fistula opening, the urine begins to flow out through the vagina. By the time the pocket grows larger and even if the mobilization, inversion, and closure of the fistula is performed perfectly, the operation will not be successful, because the pocket will still be present, producing tension and downward pulling of the posterior lip of the fistula. Sooner or later the repaired edges of the fistula will tear apart, and the fistula will recur. We believe this was the reason for the failure of the many previous operations this patient had undergone and our success was due to the correction of the downward displacement of the bladder.

The only purpose of this article is the above discussion of changes which take place in the bladder and surrounding tissue in case of a vesico-vaginal fistula following hysterectomy. The type of operation should be chosen accordingly. The pathology should be understood, considered and corrected as a whole in every individual case and then the result will be satisfactory.

We wish to stress, very briefly, certain principles to which we adhered and which were instrumental in our success:

1. The patient should be prepared before surgery with ketogenic diet and medication such as sodium acids phosphate and ammonium chloride to keep the urine acid. This prevents phosphate deposits in the vagina and around the fistula. Alkaline urine always delays healing. The patient must be kept comfortable by keeping the operative field clean—warm water douches, followed by dermatol powder to keep the perineum dry are very useful.

2. We do not believe the type of suturing material is particularly important so long as it is non-irritating. Twenty-day catgut will serve the purpose.

3. The bladder should be kept empty during the operation and postoperative course. Whether or not a retention catheter is used is a matter of individual choice. If one is used, care should be taken that it does not touch the suture line and cause damage there. We used a simple rubber catheter in this case for twenty-four hours only and, after that, asked the patient for frequent urination.

4. Free mobilization of the bladder all around the neck of the fistula and suturing with two layers of sutures is very important.

5. Correct the secondary pathological findings regarding the position of the bladder and condition of surrounding tissue.

SUMMARY

A case of vesico-vaginal fistula following hysterectomy which has been corrected after numerous failures is presented. The changes in the position of the bladder, the pathology of the surrounding tissues and the action of the intra-abdominal pressure in cases such as this are the cause of failure in surgery. The importance of the correction of subsequent changes in addition to proper closure of the fistula itself is emphasized.

30 N. Michigan Ave.

THE UPPER RESPIRATORY REVENGE OF THE ALLERGIC CHILD

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THE ALLERGIC CHILD IS BORN THAT WAY

Practically every allergic child has a family history. We have satisfied ourselves concerning this point so completely that we recheck the di-

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Deceased, November 29, 1939.

rect and differential diagnosis if we are told that that there are no other cases of major or minor allergy in the immediate or antecedent family. The specific disorder is not inherited but the tendency to develop allergy is manifest. In other words, an asthmatic mother may have an eczematous infant, or a father with urticaria may have a child with hay fever. Nevertheless, there is a little tendency for hay fever to beget hay fever and asthma to beget asthma. Statistics which would entice geneticists but might prove a tiresome tangent in this exposition, indicate clearly that the more numerous the allergic antecedents, the stronger the inheritance so to speak, the more numerous the allergic offspring and the earlier in life the condition will assert itself. The figures and percentages come off the accounting pencil with mathematical precision.

Herewith is presented an average picture of family allergy (table 1). In this group there is the obvious eczema, hay fever, asthma and hives and the less appreciated so-called sinus disturbance, migraine, pylorospasm, thymus and gastro-intestinal symptoms.

The subject of thymus deserves a separate sentence. The infant with a persistent, widened mediastinal shadow, particularly if it appears to compress the trachea or manifest its thickening on the transverse view, is guilty of harboring one of the stigmata of the allergic constitution. This finding impressed itself emphatically in a review of 186 diathetic babies formerly labelled "the infantile diatheses" and keeps recurring as it is examined in routine, upright fluoroscopy. To confirm the validity of the "chest print" is the disproportionate frequency of the history of a "thymus" in the allergic patient who first appears in later childhood and the teen age or in his siblings. The history can only be elicited when the allergic patient is young enough to be accompanied by the parent. The history routine does not include the question, but the information is so frequently volunteered that it makes our personal findings at the other end of the story more significant, particularly when the diagnosis in the older group was made by others with no idea or prejudice with regard to its connotation.

Along with this "chest print" are other signs and symptoms of the gastro-intestinal tract, including pylorospasm—the first sign of allergy-pharyngeal spasm with belching and gulping while nursing, anal sphincter spasm, bowel spasm (colic?), respiratory peculiarities such as inspiratory crowing on nursing, fine wheezing after cod liver oil, a peculiar rapid, shallow respiratory movement of the chest which we have termed "fluttering," skin findings such as eczema, "cradle cap," sudden pallor and sometimes cyanosis, bone signs such as craniotabes at four months, cranial rickets and often rapid gain in weight. Sometimes there are generalized convulsions. This is the type of child who is either noisy, fretful and given to delirium with fever when older, or is very placid. There are extremes of behavior.

ALLERGY DISTURBS HIS GROWTH AND DEVELOPMENT

A chronic constitutional disorder necessarily disturbs the processes of growth and development in the growing organism. Blocking of the nasal passages causes mouth breathing with its peculiar appearance. Lack of ventilation of the sinuses prevents their development and changes the facial contour accordingly. Asthma interferes with oxidation and causes structural changes in the chest aside from the general effect on growth.

These changes are best appreciated in illustrations. The first is an asthmatic boy of fourteen years standing beside a boy of fourteen years, who is himself about one year below the average for height and weight (figs. 1 and 2). There is a marked contrast. The patient has had "bronchitis" since early childhood, but a definite diagnosis of asthma was not made until he was six years of age. Note the marked pigeon breast. His facial expression is anxious and pinched. On profile his knees are bent forward, and he assumes the fatigue posture. The second picture is that of a girl with a similar history (figs. 3 and 4). She displays prominently the pinched features, nasal prominence, paranasal depressions and anxious expression. Nose and throat specialists will especially appreciate the incomplete development of the maxillary, sphenoid and ethmoid sinuses which collaborate to carve out the results. Notice the anxious expression about the eyes, and the fatigue posture on profile, with sunken chest, prominent abdomen, and forward bending of the partly flexed knees. This child of fifteen years was led in by

her mother with the story that she had been out of school most of her life, that she could not associate with girls of her age because of her disability and that she had had some testing and treatment without real interest or energy. Suffice it to say that with the establishment of the etiologic diagnosis and indicated treatment and environmental control, this young woman has lost her infantile outlook and retarded development. She goes to school and comes to the office—far from her home—by herself or with her school friends. She comes in bounding, with erect posture for which no direct treatment was instituted, a happy, well adjusted individual.

IT AFFECTS HIS BEHAVIOR

No child can act well when he does not feel well. The wise mother says to her irritable child, "Mary, do you feel well? Let me feel your head." The allergic child is chronically disturbed. His nose bothers him; his breathing causes a rumpus, or his skin itches. The allergic child cannot be at ease. This may cause an emotional disturbance or an emotional cause may aggravate his symptoms. That is a far cry from



Figs. 1 and 2. Upper respiratory revenge of allergic child.

the insistence of the analyst that the emotional disturbance causes the allergic manifestation. In the case of the boy in the illustration, he had been sent by the Social Service "Case" Worker to the psychoanalyst on the basis of two points in his history. First, he had week-end asthma which was immediately interpreted as an attempt to avoid helping his mother with the six younger children although there were two older. Second, he preferred to sit on the side lines



Figs. 3 and 4. Upper respiratory revenge of allergic child.

watching the girls chase the boys or vice versa, because he knew he would wheeze if he joined in and would even wheeze when he tried to laugh heartily at their antics. The latter was immediately pounced upon as sexual repression. There was a definite allergic explanation for both phenomena but, in the meantime, for a period of months, he had been sent from pillar to post resulting in a ponderous quantity of irrelevant behavior minutiae. Eventually, I presume, they intended to talk his life-long asthma out of him instead of giving a few drops of adrenalin or an injection of aminophylin which gave him complete relief for a month when he was made available to use for management. I should take a sadistic delight in subjecting an asthmatic analyst to another analyst for "talking it out of him" and withholding the breath-restoring relief of known effective treatment but, fortunately or not, there is definite evidence that more analysts require analysis than allergy. This is questionably flattering in light of the striking statistics that there are extremely few allergics in the state institutions for the mentally disturbed, and that allergy returns frequently

when the patient develops a remission[2]. In other words, when psychiatry enters allergy flies out of the window.

To take a milder case, I offer the mean, irritable and unhappy child of very placid and pleasant parents. The mother admitted her own disappointment in her little girl. There was no apparent explanation for the child's disposition. The father was a ragweed hay fever patient, who vomited and belched in the summer, resembling the father described in the geneology above. At the age of five the child developed typical hay fever and was placed on allergic management. She soon became transformed into as sweet and joyful a personality as one could wish.

In other words, allergy affects behavior. It is operative even in the very young. An early sign of behavior deviation is the fact that allergic children talk in their sleep.

IT PAINTS HIS INFECTIONS WITH ITS OWN PECULIAR HUES

The allergic child is an extremist in behavior. He is also an extremist in his reactions to infections. The eczematous baby is apt to develop severe throat, ear and skin infections, including erysipelas and kidney disturbances overlooked in the edema of the face. When the croupy child with a tendency to asthmatic bronchitis develops pneumonia, he exudes early and frequently develops empyema. Allergic children react in an exaggerated manner to infections. As an illustration, I recall the case of a ten-year old boy with a history of frequent asthma in the fall and repeated febrile colds. He had pylorospasm in infancy and night terrors in later childhood. There is an allergic family history. My first contact with the child came in the form of a telephone call during my office hours when the mother said, "Doctor, I want you to see my boy. He is very low with asthma." This was a startling conversation, as you might imagine, and I arranged to have the boy brought to the hospital. He had asthma desperately in the right chest, but he had pneumonia with complete consolidation on the left and scarlet fever over all. The course of the clinical composition and some of the other allergic incidents and implications could make him the subject of a report by himself. The boy recovered and has been under treatment for hay fever which was the basis of his fall asthma. From a chronic complainer, invalid and school absentee, he has taken his place with the other children to the extent that he has twice required the use of tetanus antitoxin with all the adventuresome details of allergic administration. Other cases could be related to indicate the frequency with which an allergic child is apt to respond to infection with a crazy course.

The allergic child of the family can be seen to react differently when there are siblings as controls. Again I quote our boy of the picture. Three of the children had whooping cough at the same time. The other two had an average course and went about their play. Our hero was violently sick and confined to bed most of the time.

There is a moral which must be sounded in fairness to the new, often maligned until appreciated, then amateurly imitated specialty of allergy. When a child who has been known over a period of years with his infectious foibles and frequently develops allergy, and is thereafter treated particularly on the perennial basis, there is a dramatic reduction of the upper respiratory disturbances in frequency and severity. The subject does not lend itself to statistical demonstration, but there are flattering frequencies of mothers' unsolicited observations that "the child never has a cold since he has been taking the treatment." The treatment in question is not directed against cold or the nasal conditions per se, but usually refers to hay fever or asthma.

HE REBELS. HE TAKES IT OUT ON HIS RESPIRATORY STRUCTURES, HIS DIGESTIVE TRACT, HIS NERVOUS SYSTEM, HIS SKIN, EYES, JOINTS, ETC.

From the respiratory standpoint, the most conspicuous aggression is the allergic salute. The allergic nose itches. For relief, the child either grimaces or rubs. The rubbing may be rotary, which some consider pathognomonic; it may be sort of pinching; or the hand shoots smartly upward, palm against the tip of the nose in the characteristic allergic salute.

The pale, blue gray, waterlogged nasal membranes narrow the inflow of air with sniffling or auxiliary mouth intake. The posterior pharyngeal wall and the fossae after tonsillectomy may be covered with accentuated lymphoid follicles often giving a cobblestone appearance to the

throat. Croup in babyhood becomes asthmatic bronchitis in early childhood until the asthmatic nature of the difficulty is eventually admitted by parent and physician. Coughing in this hypertonic group, whether bronchial or provoked by the easily affected pharyngeal lymphoid tissue, frequently occurs in paroxysms and results in gagging and vomiting. The physician will do well to have a prepared statement when the health authorities relay the accusation of the omniscient neighbor that he is aiding and abetting a case of whooping cough.

In the digestive tract the first sign of allergy is manifest, namely, vomiting. It may be so-called pylorospasm or surgically proved hypertrophic pyloric stenosis. The vomiting infant presages an allergic individual. He will bear observation accordingly. The colicky baby falls in the same category, and we must cast suspicion on the fairly common but unrecognized celiac disease, particularly overlooked in its milder forms. Curiously, this condition is more apt to occur in children with a history of pyloric stenosis. Later other disturbances of the gastrointestinal tract may manifest themselves on the basis of food idiosyncrasy.

The nervous system yields cases of migraine and epilepsy. The skin offers eczema, urticaria, angioneurotic edema, prurigo and dermatitis or flexural eczema. The eyes are frequently the site of lid dermatitis on a contact basis besides episcleritis on an inhalant basis and vernal catarrh which still prove baffling. Joint pains are sometimes due to food sensitization in children. This is demonstrated by the success of dietary management in such cases. The "et cetera" includes other less well known or appreciated conditions, particularly the hemorrhagic manifestations, such as essential hematuria and types of visceral and joint purpuras. I have an eleven-month old baby on the service, who was brought to the hospital for a generalized hemorrhagic condition beginning about the umbilicus, and extending irregularly downward with no signs of scurvy in the bones. He has been asthmatic since the age of four months.

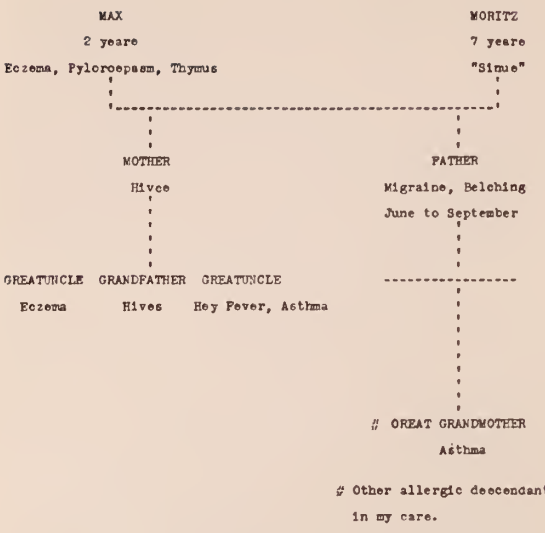
THEN HE ENSNARES THE UNWITTING DOCTOR TO ENTER A CONSPIRACY AGAINST HIS "SINUS DISEASE," HIS "NARROW NASAL PASSAGE," HIS TONSILS, ADENOIDS, POLYPS.

What does this all mean. First, with regard to "sinus disease," there may be acute sinusitis but rarely is there chronic sinusitis. Why should there not be sinus infections in an allergic, edematous condition which causes occlusion of the ostia? It is a truism that infection is certain to occur in any obstructed structure of the body which is normally patent whether it be sinus, bile passage, urinary tract or externally secreting glands. In allergy the sinus involvement is an effect rather than a cause, and sneezing is not characteristic of sinusitis.

The "narrow nasal passage" is due to edema of the overlying membranes rather than a structural bone defect. Operations on turbinates leave the nose worse off than before with crusting and failure of air warming, so that more irritation occurs in the throat, together with bronchitis. Forman[3] conceives the mucous membrane reaction a form of contact sensitivity. From this standpoint Cohen and Rudolph[4] performed direct testing on this group and succeeded in salvaging an appreciable percentage of cases from the waste basket of diagnosis. They have tabulated succinctly the distinguishing characteristics of allergy and infection of the upper respiratory tract pertinent to this discussion, and indicate the occurrence of mixed types (table 2).

The attitude toward the tonsils and adenoids should be determined by the usual indications for removal. In other words, the results of careful studies indicate that tonsillectomy and adenoidectomy per se have no therapeutic benefit in asthma[5]. If there is a reason for surgical removal such as ragged, cryptic, frequently infected tonsils, repeated ear infections or peritonsillar abscess there should be no hesitation. To remove tonsils and adenoids in the attempt or hope to alleviate asthma, unless the usual indications are present, is definitely a surgical mistake. There is no excuse for tonsillectomy on the grounds that fewer "colds" will result and therefore fewer attacks of asthma. The "colds" continue to recur, and pulmonary involvement is not relieved. Parenthetically, when properly advised tonsillectomy is in order, it is preferable to avoid pollen seasons, because hay fever may be precipitated where none existed before and chronic cough may result. This idea applies equally well to any operative procedure, particularly when it involves an inhalant anesthesia. I prefer the very early spring or

TABLE I



late fall for operating upon children in the Chicago area.

Polyps are rarely a problem before the age of puberty. They do cause obstructive symptoms, but they do recur in allergic children. The situation may be summed up as follows. Surgery of the upper respiratory tract whether directed against sinus infections, nasal passages, tonsils, adenoids, polyps should be deferred until there has been a complete allergic study to discover the etiology of the constitutional peculiarity which permits the development of the pathology which surgery hopes to correct, and until sufficient treatment has been instituted to reduce the probabilities of recurrences to a minimum. From a positive standpoint the child who receives the benefit of this type of management will be improved not only in his local disease, but in his physical, as well as mental, outlook.

HIS COMPLAINT IS ALLERGY; HIS REVENGE IS SURGERY

The allergic child has a complaint. There is something peculiar to him that makes him hypersensitive to factors in his environment. It manifests itself in many ways. Among the most annoying to him are the troubles with his nose and throat. He avenges himself on the merely incidental end-organs of his allergy by outraging these structures with surgery. The ethical and allergic truth is branded upon his own person that vengeance injures the avenger most.

COMBINED; ALLERGIC AND INFECTIOUS

Primary allergic conditions are often secondarily infected. Cure depends on recognition and relief of the allergy. The body then overcomes the infection in most cases. This does

TABLE II.

Differential Diagnosis of Allergic and Infectious Conditions of the Upper Respiratory Tract in Children (Cohen and Rudolph).

	ALLERGIC	INFECTIOUS
HISTORY		
1.	Attacks usually recurrent.	Attacks usually single.
2.	Often mild symptoms between attacks.	Usually clears up completely.
3.	Definite relation to heredity.	No relation to heredity.
4.	Not contagious.	Contagious
5.	Not related to exposure to another case.	Definite relation to exposure to another case.
6.	Constitutional symptoms slight.	Constitutional symptoms more marked.
7.	Foods and inhaled substances often traced as causes.	No relation to foods or inhaled substances as cause.
8.	Itching common.	No itching.
9.	Wheezing common.	No wheezing.
10.	Other allergic conditions present or in past history.	Usually no other allergic condition present or in past history.
EXAMINATION		
1.	Visible mucous membranes, pale, glistening, edematous.	Visible mucous membranes, hyperemic, red.
2.	Thin, watery, mucoid nasal discharge, mucoid sputum.	Mucopurulent or purulent nasal discharge or sputum.
3.	Smear shows eosinophiles in large numbers.	Smear shows polymorphonuclear neutrophiles as predominant cell; eosinophiles few or absent.
4.	Other signs of allergy often present.	No other sign of allergy.
5.	Sinus involvement of the edematous type.	Sinus involvement of purulent type.
6.	Wheezing breath sounds.	No wheezing breath sounds.
7.	Roentgenogram shows bronchial markings increased.	Bronchial markings not increased in roentgenograms.
8.	Allergic skin reactions usually positive.	Allergic skin reactions usually negative.
TREATMENT		
1.	Epinephrine specific for asthmatic symptoms.	No relief from epinephrine or ephedrine
2.	Avoidance of specific allergens followed by relief.	Avoidance of food or inhalant substances produces no change.

not preclude treatment for the infection when indicated.

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DISCUSSION

Dr. Thomas C. Galloway, Evanston: We probably all will agree with Dr. Tumpeer that the constitutional make-up of these patients is too often not considered. Allergy has many angles, and borders on many other conditions including endocrinopathies, calcium deficiencies and the like. Its manifestations may often be cleared up by attention to these.

A most difficult factor with allergy is superimposed infection. In these cases the allergist cannot give perfect relief. The infection and the allergy perpetuate each other and both need attention. The allergist should have the first opportunity, and if more treatment is needed it should in these patients be the most conservative to get results. Unfortunately the allergist does not function 100 per cent. perfectly.

Perhaps some surgery must be done and removal of adenoids, less often the tonsils, may give brilliant results in such cases. It is true that such surgery may precipitate an acute allergy, especially if done in the hay fever season. One must not promise too much but it has been shown that an open nasal airway is necessary for the proper development of the dental arch, the nasal chambers and the sinuses.

Other things may be considered as light zinc ionization, which seems of some value, and sclerotics in the turbinates. We hesitate to do anything that will scar the surface of the turbinates.

The question is not yet answered but there is progress.

Dr. Thomas D. Allen, Chicago: Not being a nose and throat man, but being allergic, I would like to ask some questions. I am allergic to a good many foods, and my family is full of allergic children, and I would like to know what to do about it. Do we have to treat patients with every substance to which they are allergic, or is there something that can be done in the way of general treatment that will affect the whole economy for our purpose?

Dr. I. Harrison Tumpeer, Chicago (closing): As to whether there is a "cure"—every year there is a new "cure" for hay fever—but you cannot change the patient's constitution. These remarks hold true for wheat germ oil, anterior pituitary injections, zinc ionization, viosterol intravenously and potassium chloride. If there were a simple, effective method of treating allergy, everyone would know and practice it.

The basis of managing an allergic patient is fundamentally the sound and thoughtful study applicable to any medical problem plus a special technic typified but not monopolized by skin testing. This includes a thorough history, physical examination, laboratory tests such as nasal smears, blood count, basal metabolic rate, gastric analysis, radiographic studies and electrocardiograms. After these come allergic technics such as skin, eye and nasal tests, patch tests, passive transfer and various types of dietary manipulations and environmental control. To perform skin tests first, if not foremost, is to grab the wrong end of the stick. To illustrate, an excellent clinician recently sent me his nurse-assistant to learn all about the performance of skin tests in four days. She had had no previous experience in allergy whatsoever, and apparently all he had had was the wistful hope to participate in the huge financial profits of an overflowing office based on the flourishing of a magic syringe with gusto. The situation to him was simple, and so simple, that he expected her to learn to interpret the tests all in four days. Mind you, interpretation of tests is based on the local reaction, but only when the interpretative eye is focussed far ahead on clinical experience. The attitude of my friend describes the general impression of allergy which the profession entertains. It is also illustrated in the discussion today.

I showed you the picture of a girl who had undergone tests at a good institution with some form of treatment but without a logical "follow-through" based on her history, environment and tests.

With regard to the question of multiple sensitivity and its treatment, all the foregoing still applies. Examine, test, interpret and treat, on the basis of all you have learned, the individual patient's problem and your training and experience. After all, even an allergist has learned a few things with regard to handling an allergic problem which is not readily translated to the profession at large. Similarly, every physician has been taught the nose and throat specialties in school and in his internship, but you specialists have acquired and perfected effective methods and technics peculiar to your specialty or to yourselves individually. Otherwise, you would scarcely deserve the name of specialists. You can do more with an ear, nose and throat problem than the general practitioner who only knows the subject in a general and, in the case of allergy, particularly, in a conceitedly uninformed and hazy manner.

The lymphoid, inflammatory-exudative and other types of diathesis which have been mentioned in the discussion are merely details in the general picture of the infantile diatheses. In the early days these peculiar reactors were called diathetic, and an attempt was made to break them up into distinct types. Even then, there was a disconcerting tendency for the findings of the exudative to crop out in the thymicolymphatic and so on. Yet all these types had one factor in common which we can now interpret in the light of allergy, namely, a tendency to react in a manner different from the average. There you have the definition of allergy. By spotting these children as allergic we have taken a step forward in our understanding, and therefore treatment, of the condition.

I emphasized that hyperesthetic rhinitis may close the ostia of the sinuses and thereby permit the devel-

opment of a true sinusitis. When this happens in the developing child, proper ventilation and formation of the structures is retarded. This will reflect itself in the appearance of the face, with depressions about the nose and pinched features which are usually attributed to adenoids. The jaw is narrowed, and a large percentage of children requiring orthodontia are allergic.

It is admitted that the etiologic diagnosis of allergic rhinitis is far from perfect. Cohen and Rudolph in Cleveland developed direct nasal testing with allergens and reduced the number of failures in these cases.

It is agreed that sometimes striking improvement is seen with thyroid therapy. This does not mean that the individual is not allergic or that one can ignore the factors to which the patient is sensitive. As an example of this type, I mention a woman in the thirties, whose children are patients, with previous indications of allergy, but not sufficient to be clinically important. She developed a marked allergic rhinitis, and a tendency to wheezing with definite asthma eventually. The asthmatic episodes occurred significantly about nine o'clock in the evening when she was accustomed to sit in the living room with the family and read. Her husband observed that she began her attacks at this hour when the heat was turned down in the apartment, and he attributed it to chilling. At other times her attacks would awaken her at four or five in the morning, a period of low body temperature. From my previous acquaintance with the patient, I got the impression that she was getting heavy and solid looking, and there was a sort of dullness and lack of interest in her demeanor. She volunteered that her children irritated her and that she was aware of the change in her personality. Her husband complained that she could not even be interested in going out to buy new clothes. To clinch the suspicion that she was sensitive to cold, that she was reduced in metabolism, was her statement that she was following a reducing diet but gaining in spite of these measures. Incidentally, she had consulted internists as well as some of your colleagues. Her basal metabolic rate was minus 17%. With desensitization to her inhalant allergens and a dosage of thyroid extract of one and one-half grains daily, she improved dramatically, not only from the standpoint of her nasal symptoms, but in reduction of weight so that her face no longer looked thick, in her enhanced and restored interest in people and places, and her renewed enthusiasm for clothes. That should be the end of the thyroid sentence. The rest of the story includes the fact that her nose fills up and runs as soon as she enters the reception room if many others are present. The other day she attended a luncheon given for the parents of the school her child attends. She could hardly wait to get out because she was affected by the cosmetics and perfumes of the crowd of women. Here is an illustration of the importance of the endocrine glands, notably the thyroid, on the development of allergic symptoms or, at least, an example of the therapeutic effect of such substances. The same story can be told with regard to the ovarian preparations. On the other hand, these people are allergic and can be so demonstrated from the standpoint of tests and clinical experience of their own, particularly with regard to environment and treatment.

The point of the whole paper is simply this. From the negative side there is no quarrel with surgical indications in the field of ear, nose and throat surgery. I have several patients now whom I have referred within the past few weeks, and one is having a tonsillectomy today. Obstructions must be removed. Infections must be cleared and drained. However, if the obstruction is on the basis of nasal polyps or allergic rhinitis with difficult nasal breathing, and if the infection is on the basis of a sinusitis secondary to allergy of the nose the condition will recur to plague the operator unless the underlying allergic situation is corrected. If the patient is given the benefit of allergic treatment first, the surgery will be vastly more successful, and in the long run there will be greater satisfaction and sense of accomplishment for both patient and doctor.

CONTROL OF SYPHILIS IN PREGNANT WOMEN

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Venereal Disease Control Officer
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It is a well known fact that untreated syphilitic mothers will bear only 16 per cent. of normal non-syphilitic children, the remaining 84 per cent. being represented by miscarriages, stillbirths and living syphilitic babies. This information has been substantiated by downstate physicians, giving the results of the outcome of pregnancies of luetic women, as mentioned on the Confidential Report of Venereal Diseases sent to the Illinois Department of Public Health at Springfield.

The writer began to formulate a plan whereby these cases would be singled out, card indexed and placed in a group which could be managed in such a way that the incidence of prenatal and congenital syphilitics could be greatly de-

Since this article was submitted for publication, the number of syphilitic pregnant women reported by private physicians has increased to over 300 cases. This marked increase was brought about by the private physician's interest in our efforts and the inception of the State pregnancy law, July 1, 1939, providing for blood testing of all pregnant women. A similar number of luetic pregnant women are under care in our free clinics. A complete and detailed report of these luetic pregnancy cases will be submitted for publication at a future date.

Read before Meeting of the State Health Officials, Round Table Discussion of Venereal Disease Control Programs, March 30, 1939, Chicago, Illinois.

From the State Department of Public Health, Doctor Albert C. Baxter, Director.

creased if not entirely eradicated. There is no doubt that these tragedies may be prevented with almost absolute certainty, if syphilis in the mother is recognized early and treatment begun before the fifth month.

The plan of management of these cases include:

Special File
Personal Letter to Physician
Prescheduled Treatment Outline
Free Drugs
Free Nursing Service
Follow-up

SPECIAL FILE

The Special File is made up of all cases of syphilitic pregnant women reported to the State Department of Public Health and consists of all the information pertinent to each case, such as the approximate date of conception and delivery, duration and type of luetic infection, the report of serological tests, the amount of treatment already administered and the complete record of the amount of treatment to be given, as well as the outcome of the confinement and a check-up on both the mother and child including a complete physical examination of both and a blood test of the mother and an umbilical cord Wassermann of the child.

PERSONAL COMMUNICATION

A personal letter is sent to every attending physician reporting a case of syphilis in pregnant women, notifying him of our special interest in this type of case and informing him of the statistics of the outcome of treated and untreated cases as reported by Jeans, Turner and McKelvey. Jeans' compilation from the literature of the outcome of four thousand (4000) syphilitic pregnant women, reveals that 16.6 per cent. normal and healthy non-syphilitic children were born; 30 per cent. terminated with miscarriages or still-births; 30 per cent. of the babies died in infancy and 24 per cent. survived with a congenital luetic condition.

Turner and McKelvey reported their results in 675 cases on the influence of the time when antiluetic treatment was begun upon the outcome of pregnancy. They have shown that 91.3-95.5 normal non-syphilitic children were born when active treatment was instituted before and during pregnancy.

An earnest plea is made to the doctor to start antiluetic treatment immediately and continue same through pregnancy when infection is found in the course of prenatal medical service.

PRESCHEDULED OUTLINE

A scheme of treatment for the pregnant syphilitic woman is enclosed in this letter and it provides for a weekly intramuscular injection of bismuth throughout the term of pregnancy and eight to ten intravenous injections of neoarsphenamine in 0.3, 0.45 and 0.6 gram dosage, with an occasional four-week rest period until delivery. This scheme of continuous neoarsphenamine-bimuth treatment of the pregnant syphilitic woman is recommended by the State Department of Public Health and is essentially the same which has been used by the Departments of Dermatology and Obstetrics of the University of Illinois with very excellent results. General precautions such as slow administration of drug, the examination of the blood pressure, mother's sclerae and urine analysis are also mentioned in this scheme of treatment.

FREE DRUGS

Neoarsphenamine in the dosages mentioned above and bismuth in oil is recommended in the treatment of these cases; however, mapharsen, thio-bismol or colloidal mercury sulphide may be substituted on the recommendation of the attending physician.

FREE NURSING SERVICE

Through the cooperation of the Division of Child Hygiene and Public Health Nursing, as well as the Division of Child Welfare, we have been able to furnish free of charge the services of a public health nurse for indigent cases for prenatal, delivery and post partum assistance. We furnish the services of a nurse only on the written request of the attending physician. The District Nurse living in the same county is assigned to the physician and makes regular calls on the patient during prenatal period, assists at delivery and makes post partum calls. This service has very recently been established and we feel positive that it will prove beneficial to doctor as well as patient.

FOLLOW-UP

A complete check-up of outcome of pregnancies must be considered of the utmost importance in this entire procedure of the control of

syphilis in pregnant women. Our entire efforts can only be evaluated by an accurate check-up of the above procedure, including a cord Wassermann, a placental histology, x-ray of the entire skeleton and a pediatric follow-up in the questionable cases where these facilities are obtainable. A re-check on the blood serology of both mother and offspring is recommended routinely. We intend to follow the child clinically and serologically every sixth month until it has reached the age of two years.

ANALYSIS OF CASES OF PREGNANT SYPHILITIC WOMEN REPORTED

There were sixty-two cases of syphilitic pregnancies reported since December 15, 1938, at which time we adopted the above plan of procedure in the management of these cases. An analysis of these reported cases reveals the following facts:

Race: There were 58 white and four colored women.

Age: There were 42 cases between the ages of 15 and 25; 19 between 25 and 35 and one case the oldest in the group, was 44 years old.

Diagnosis: There were two cases of secondary lues; 57 cases of asymptomatic syphilis of less than four years duration; one case of asymptomatic syphilis of more than four years duration; two cases of congenital syphilis.

The outcome of the 24 cases which have been delivered to this date reveal that 18 of them were placed under active treatment before the fifth month and continued same until delivery. Seventeen of these 18 cases have delivered normal healthy children, with negative blood. Only one gave birth to a syphilitic child with a positive cord Wassermann.

There were two cases which received irregular and interrupted treatment, one from the sixth month and the other from the eighth month of pregnancy, and they terminated in one still-birth and a luetic living child with positive blood.

There were four cases which had no treatment during pregnancy and they resulted in three

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A SCHEME OF TREATMENT OF THE PREGNANT SYPHILITIC WOMAN*

Illinois Department of Public Health, Springfield

Week	Neoarsphenamine	Interim Treatment		Kahn or Wassermann reaction	Remarks
1	0.3 gms.	Bismuth Salicylate	1 cc.	Check	Blood Wasserman should be done on every PREGNANT
2	0.3	Intramuscularly	1 cc.		woman. Complete physical examination, urine analysis
3	0.45		1 cc.		and blood pressure.
4	0.45		1 cc.		
5	0.6		1 cc.		
6	0.6		1 cc.		Treatment is for the child. Mother can be treated AFTER
7	0.6		1 cc.		delivery. Drug must be administered very slowly.
8	0.6		1 cc.		
9	Rest Period		1 cc.		
10	Four		1 cc.		If diagnosis of Syphilis is made at 3 or 4 months of preg-
11	Weeks		1 cc.		nancy, plan treatment to start and end with neoars-
12	0.3		1 cc.		phenamine.
13	0.3		1 cc.		
14	0.45		1 cc.		Continuous treatment.
15	0.45		1 cc.		
16	0.6		1 cc.		Patient receives the bismuth salicylate intramuscularly
17	0.6		1 cc.		every week throughout pregnancy (no rest).
18	0.6		1 cc.		Watch mother's sclerae and repeat urine analysis.
19	0.6		1 cc.		
20	Rest Period		1 cc.		
21	Four		1 cc.		
22	Weeks		1 cc.		Mother's Wassermann taken one week before delivery.
23	0.3		1 cc.		
24	0.3		1 cc.		
25	0.45		1 cc.		Infants Study: 1) Cord Wasserman.
26	0.45		1 cc.		2) Placental Histology.
27	0.6		1 cc.		3) X-ray of entire skeleton.
28	0.6		1 cc.		4) Pediatric follow-up for at least 6
29	0.6		1 cc.	Check	months.
30	0.6		1 cc.		

EACH PATIENT MUST BE TREATED AS AN INDIVIDUAL CASE

SUBSTITUTION OF any of the above drugs will be made at the attending physician's recommendation and selection

*The scheme of CONTINUOUS neoarsphenamine-bismuth treatment of the pregnant syphilitic woman outlined above has been recommended by the Illinois Department of Public Health and is essentially the same prepared under the direction of the Department of Dermatology (Senear) and successfully used by the Department of Obstetrics (Falls) of the University of Illinois.

still-births and one luetic child with positive blood and clinical evidence of infection.

The remaining thirty-eight cases which will be confined in the near future have been carefully checked and found to be receiving antiluetic treatment. The outcome of these pregnancies will be closely observed as to the amount of antiluetic treatment each received, the result of each pregnancy with blood tests of both mother and child. If blood tests are negative, a re-check will be made every six months up to two years. If positive however, treatment will be instituted as soon as possible.

This is a preliminary report of all the cases of syphilis in pregnant women (62) reported to the State Department of Public Health since December 15, 1938. A more detailed discussion of syphilis in pregnant women together with all pertinent facts of each case and the results of all the cases reported here, including all future case reports will be published at a later date.

LABORATORY STUDIES IN HUNTINGTON'S CHOREA

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CHICAGO

Although almost five hundred papers dealing with the various aspects of Huntington's chorea have appeared in the literature since 1841, only five have been concerned primarily with laboratory studies of that disease.

In 1910, Pighini and Alzina[1] discussed their research studies on metabolism in Huntington's chorea. The following year, Lorenz[2] reported negative spinal fluid findings in two cases. In 1912, Mulon and Porak[3] in a case report, speculated on adrenal changes with associated cholesterol and pigment changes. Huhnerfeld[4] in 1931 presented studies of blood sugar and calcium, blood sedimentation and hemograms. Finally in 1935, Bize[5] in a paper on clinical and humoral studies, presented the most complete laboratory study made up until that time, using, however, only one case. He found a hypocalcemia, an increase in blood magnesium, an increase of blood bromides associated with a decrease in the chlorides, and a hypoglycemia. He concluded that the parathyroid may have been playing a role in the case.

Fifteen cases of Huntington's chorea at the Elgin State Hospital were given a series of laboratory examinations. These involved complete spinal fluid examinations including cell counts, Wassermann and globulin tests, colloidal gold curves, and sugar and chloride determinations. On the blood, complete counts, Wassermann and Kahn reactions and chemistry examinations for sugar, non-protein nitrogen, creatinine, chlorides, calcium, cholesterol and phosphorus partition were done. Icteric index determinations, Van den Bergh tests and sedimentation rates were also ascertained. Glucose and insulin tolerance determinations, and the Walther permeability tests were done, as well as basal metabolism tests wherever possible. Complete urinalysis, microscopic and macroscopic, completed the series of tests.

Two of the patients expired shortly following their admission to the hospital and not all of the tests had been completed at the time of their death. As a control, one typical case of senile (chronic progressive) chorea is included as the last in the series. (J. L.)

The tables below are self-explanatory.

Table 1 reveals no abnormal findings except for decreased chlorides, moderately increased blood calcium and increased blood cholesterol in an elderly choreic who was quite dehydrated and seriously ill at the time (J. C.). The other elderly choreic who expired within a relatively short period of time (M. N.) presented findings of cardio-renal-vascular disease associated with an elevated blood non-protein nitrogen and creatinine, as well as a moderately elevated blood sugar. The blood phosphorus and sedimentation rates were not obtained on either of these cases, or on the senile choreic.

Table 2 reveals no definite abnormal spinal fluid findings. The Walther bromide permeability test was conducted according to the standard technique and the quotient was normal or even a little elevated in the most typical cases. In the control case of senile chorea which is the last one in this table, the quotient was 2.30.

Table 3 presents studies in the carbohydrate

From the Elgin State Hospital, Dr. Chas. F. Read, Managing Officer; Department of Nervous and Mental Diseases, Northwestern University Medical School; and the Institute for Juvenile Research.

We are deeply indebted to Mr. DeLester Sackett, Director of the Laboratory of The State Psychopathic Institute, for his invaluable assistance in this work.

TABLE 1—URINE AND BLOOD EXAMINATIONS

Patient	Urinalysis	Blood Wass. & Kahn	Blood Count	Blood Calcium	Blood Phosphorus	Blood Chlorides	Blood Cholersterol	Blood Sugar	N. P. N.	Creat	Icteric Index	Vandenbergh	Blood Sedimentation
G. K.	Neg.	Neg.	Nor.	9.1	3.3	462.0	193.3	85.1	29.0	1.87	7.1	Neg.	Mod. Act.
A. H.	Neg.	Neg.	Nor.	11.70	3.6	445.5	140.0	75.2	30.6	1.42	1.5	Neg.	Sl. Act.
A. A.	Neg.	Neg.	Nor.	10.20	3.49	445.5	121.0	88.8	26.9	1.29	9.8	Neg.	Nor.
T. C.	Neg.	Neg.	Nor.	11.20	3.72	495.0	160.0	75.4	26.6	1.25	6.7	Neg.	Sl. Act.
A. J.	Neg.	Neg.	Nor.	11.03	3.39	478.5	155.0	94.7	31.4	1.15	3.4	Neg.	Mod. Act.
M. S.	Neg.	Neg.	Nor.	11.10	3.7	526.2	152.5	75.4	35.1	1.54	8.5	Neg.	Nor.
M. N.	Neg.	Neg.	Nor.	10.90		405.0	179.8	114.2	73.8	2.14	7.0	Neg.	
J. C.	Neg.	Neg.	Nor.	12.2		157.72	251.4	76.5	38.2	1.52	12.0	Neg.	
C. A.	Neg.	Neg.	Nor.	11.90	2.97	445.5	150.7	82.6	36.3	1.70	4.0	Neg.	Mod. Act.
M. B.	Neg.	Neg.	Nor.	9.3	3.2	460.3	148.5	86.9	39.0	1.51	6.9	Neg.	Nor.
T. S.	Neg.	Neg.	Nor.	10.60	3.26	429.0	122.2	76.3	25.6	1.32	11.0	Neg.	Nor.
E. H.	Neg.	Neg.	Nor.	9.9	3.48	396.0	128.7	91.0	30.2	1.47	5.0	Neg.	Nor.
R. H.	Neg.	Neg.	Nor.	11.0	4.00	445.5	135.3	83.3	32.1	1.37	8.0	Neg.	Nor.
H. B.	Neg.	Neg.	Nor.	10.8	3.61	455.5	125.0	98.0	28.3	1.31	6.7	Neg.	Nor.
R. M.	Neg.	Neg.	Nor.	10.4	3.60	396.0	166.6	75.5	37.0	1.69	6.0	Neg.	Nor.
J. L.	Neg.	4 +	Nor.	10.80		528.0	186.6	95.6	32.0	1.58	7.0	Neg.	

TABLE 2—SPINAL FLUID TESTS

Patient	Cell Count	Pandy	Ross Jones	Wass.	Sugar	Chlorides	Lange Gold Curve	Permeability Quotient
G. K.	1	Neg.	Neg.	Neg.	64.5	709.5	0111100000	3.45
A. H.	1	Neg.	Neg.	Neg.	68.0	720.0	0000000000	3.50
A. A.	10	Neg.	Neg.	Neg.	71.9	676.5	0000000000	3.00
T. C.	1	Neg.	Neg.	Neg.	75.4	742.5	0000000000	2.86
A. J.	2	Neg.	Neg.	Neg.	93.0	726.0	0000000000	2.62
M. S.	1	Neg.	Neg.	Neg.	72.0	702.0	0000000000	2.66
C. A.	1	Neg.	Neg.	Neg.	60.6	724.0	1111100000	3.31
M. B.	1	Neg.	Neg.	Neg.	62.5	676.5	0000000000	2.90
T. S.	5	Neg.	Neg.	Neg.	67.1	704.0	0000000000	3.19
E. H.	1	Neg.	Neg.	Neg.	80.0	693.0	0000000000	3.15
R. H.	6	Neg.	Neg.	Neg.	75.5	676.5	0000000000	3.00
H. B.	1	Neg.	Neg.	Neg.	78.0	575.5	0000000000	3.00
R. M.	2	Neg.	Neg.	Neg.	91.0	676.5	1111000000	3.15
J. L.	7	+	+	Neg.	62.5	726.0	0000000000	2.30

metabolism. The results show glucose and insulin tolerance curves of various types with no specific or distinctive pattern that stands out as being of special importance.

Table 4 reveals studies of the phosphorus partition of the blood.

SUMMARY

1. Fifteen patients suffering from Huntington's chorea were given extensive laboratory investigations including complete urine, blood and spinal fluid examinations. These were, more specifically, blood serological examinations, complete blood counts, blood sugar, non-protein nitrogen, creatinine, chloride, calcium, cholesterol, phosphorus partition, icteric index determinations, Van den Bergh tests, glucose and insulin tolerance determinations, Walther permeability tests, blood sedimentation rate evaluations, oxygen consumption rates wherever possible, spinal fluid cell counts, Wassermann and globulin tests, Lange gold curve, sugar and chloride determinations and complete qualitative urinalysis with microscopic examinations.

2. The results of all of these tests have been of an essentially negative nature throughout.

3. It would appear that there are no signifi-

TABLE 3—STUDIES IN CARBOHYDRATE METABOLISM

Patient	Glucose Tolerance	Insulin Tolerance
G. K.	85.1-117.6-117.6- 72.7- 80.0- 55.0	75.7-64.5-57.1-40.0-52.6-57.1
A. H.	75.2-117.6-153.8-160.0-136.0-105.3	66.6-64.5-52.6-55.5-55.5-55.8
A. A.	88.8-105.2-125.0-137.9-153.8-140.8	83.3-72.2-54.0-41.5-52.4-66.6
T. C.	72.7-111.1-106.9- 86.9- 68.9- 86.5	71.4-66.6-57.6-57.6-50.0-50.0
A. J.	94.7-133.3-173.9-141.8-106.4-105.3	74.0-60.6-42.0-42.9-53.7-58.8
M. S.	75.4- 96.9-128.0-127.3-124.2- 93.0	83.3-66.6-57.1-51.8-60.6-60.6
C. A.	82.6-114.2-116.2-114.9- 90.9- 88.8	74.3-60.6-44.0-40.3-49.5-51.0
M. B.	76.5-136.0-104.7-114.9- 66.6- 93.0	83.0-74.3-69.6-56.9-55.5-54.3
T. S.	76.3- 81.3- 91.9- 81.3- 71.1- 64.5	79.7-72.2-63.0-51.3-44.4-88.0
E. H.	93.0-126.1-161.2-106.3- 74.6- 72.7	71.4-47.6-35.7-42.9-51.3-52.6
R. H.	97.1-114.3-125.0-166.7-151.5-142.3	95.2-76.9-66.6-74.1-66.6-66.6
H. B.	93.4-111.1-125.0-109.3- 90.5- 92.0	100.0-86.9-62.5-74.1-71.4-62.5
R. M.	75.5-166.7-160.0-160.0-125.0-100.0	82.3-95.2-80.9-61.9-51.4-71.4
J. L.	76.9-111.1-160.0-160.0-137.9-117.6	

TABLE 4—PHOSPHORUS PARTITION TEST

Patient	Acid-Soluble Inorganic P.	Acid-Soluble Organic P.	Total Acid-Soluble P.	Lipin P.	Total P.
G. K.	3.3	19.4	22.7	16.7	39.9
A. H.	3.60	18.6	22.2	12.1	34.5
A. A.	3.49	22.91	26.4	12.2	38.1
T. C.	3.72	23.08	26.8	11.6	37.9
A. J.	3.39	16.41	19.8	15.4	34.9
M. S.	3.7	25.5	29.2	14.2	43.4
C. A.	2.97	19.93	22.9	10.9	33.0
M. B.	3.2	21.8	25.0	13.0	38.1
T. S.	3.26	23.34	26.6	10.0	36.0
E. H.	3.48	17.42	20.9	9.9	30.2
R. M.	3.60	21.00	24.6	17.3	42.1

cant gross humoral changes in Huntington's chorea, with no appreciable qualitative or quantitative variations in the more important humoral constituents.

METHODS

1. Benedict's Method (sugar).
2. Folin-Wu Method (creatinine, N. P. N. and chlorides).
3. Tisdall Method (calcium).
4. Bloor's Method (cholesterol).
5. Fiske and Subbarow Method (phosphorus partition).

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THE USE OF PICROTOXIN IN ACUTE BARBITURATE POISONING

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Picrotoxin has been shown to have striking antidotal properties in experimental barbiturate poisoning.[1,2,3,4] Reports of the use of picrotoxin in cases of barbital poisoning in man soon followed.[5,6,7,8] The Council on Pharmacy and Chemistry of the American Medical Association, however, requested that picrotoxin be withheld from the market until further data could be gathered concerning the use of the drug in man.[9] In a recent report[10], the Council reviews 27 reported cases and indicates that additional data are desirable.

It is the purpose of this communication to report two additional cases. Although the amounts of barbiturate ingested were not massive, the lapse of time before discovery was ample for complete absorption of the drug, and the symptoms were so marked that both cases were classified as severe barbiturate poisoning.

Case No. 1: Mrs. O., a 30-year old white housewife, was admitted to Chicago Lying-In Hospital Oct. 7, 1937 at 10:50 a.m. in deep coma. She was known to be about three months pregnant. Her husband stated that since Sept. 15th she had become very lethargic and inattentive to household duties, the condition becoming progressively worse. On Oct. 6, the husband returned home at 11:00 p.m. and found the patient asleep in bed. Although she did not awaken as usual, he thought nothing of it. It was not until he attempted to awaken her at 9:00 a.m. the next morning that he discovered that she could not be aroused.

On admission to the hospital, the patient was in a profound coma. The pulse was 84 per minute, the temperature was 99.0° F., and the respiratory rate was 24 per minute. She did not respond to command or to any form of painful stimulation. The general musculature was entirely flaccid. The neck likewise was flaccid. The pupils were regular, equal, and responded to light. Otherwise all superficial and deep reflexes, including the corneal and pharyngeal, were completely abolished. Pathological reflexes could not be elicited. There was a marked urinary retention causing a bulging in the lower abdomen.

Gastric lavage was done soon after admission. On lumbar puncture the cerebrospinal fluid was found to be clear and colorless with a negative Pandy test and the absence of cells. The initial cerebrospinal fluid pressure was 180, rising to 200 on compression of the right jugular, 280 on compresing the left jugular, and 400 on compressing both. Venous blood obtained soon after admission revealed the following: nonprotein nitrogen, 34 mg. per cent.; sodium chloride, 610 mg. per cent., and blood sugar, 99 mg. per cent. Urinalysis revealed no abnormalities. The leukocyte count was 4,500.

Although the patient was not known to have taken any drugs, and a careful search of the home revealed no evidence of her having done so, a tentative diagnosis of drug intoxication was made by the exclusion of other causes of coma. Subsequently, the patient stated that she had taken 36 grains of phenobarbital on the evening of October 6th.

Table I records the treatment employed with special reference to the use of picrotoxin, together with the

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changes in the clinical condition. A total dosage of 99 mg. of picrotoxin was administered. Although several other forms of stimulation were employed, because of the spacing of the treatment there can be little doubt that picrotoxin elicited a marked awakening phenomenon, whereas the other treatments did not evoke any demonstrable response. We were able to demonstrate this awakening response repeatedly, twice followed by a relapse into coma, because only two small, inadequate supplies of the drug could be obtained early in the course. It was not until the afternoon of October 8th that an adequate supply of the drug was obtained.

The striking improvement in the peripheral circulation that occurred with the use of picrotoxin is noteworthy. Before the onset of treatment, the extremities were very cold and markedly cyanotic. During the administration of the first 18 mg. of the drug (during one hour, and twenty-three minutes), the toes and fingers became warm and pink. Thereafter this improvement in the peripheral circulation was maintained, although a subsidence of the motor phenomena and a relapse into deep coma accompanied withdrawal of the drug.

About two hours after the onset of picrotoxin injections, several large blood clots were passed vaginally. Thereafter bleeding continued moderately for nine and one-half hours, when a complete abortion occurred. The fetus weighed 12.5 grams. It was in good condition and showed no abnormalities.

On October 14th the patient seemed to be completely recovered from the barbital poisoning. The urea clearance was normal. She was transferred to the Psychiatry Division for further care.

Case No. 2: Mr. L., a 23-year old, white, single, male university student, suffering from auditory hallucinations, took nine five-grain tablets of veronal (3 gm.) in a suicidal attempt on February 8, 1938. Simple restorative measures by a physician at his hotel sufficed to restore him to consciousness, making hospitalization unnecesary at the time. On February 12, 1938 he took twenty-five five-grain tablets (8 gm.) at about 7 p.m. He was not found until 2:40 p.m. the next day. Because of the known attempt four days previously, barbiturate poisoning was suspected and the patient was brought to the University of Chicago Clinics at 3:40 p.m., about twenty-one hours after the ingestion of the drug.

On entrance the patient was in a deep coma. All reflexes, including the corneal, were absent and the musculature was completely flaccid. The extremities were cold and cyanotic. He appeared very malnourished and dehydrated, making him seem to be a poor risk. There was no evidence of injury. The pulse rate was 160 per minte, the respiratory rate, 40 per minute, and the blood pressure was 100/64. These remained fairly constant throughout the night. The body temperature (taken rectally) rose abruptly from 102.4° F. on admission to 105.6° F. Shortly afterward there was an abrupt drop to 100° F. followed by a gradual rise to 103.4° F. where the temperature remained during the following twenty-four hours.

The patient was given caffeine sodiobenzoate, 0.5 gm. subcutaneously when first seen by his physician at 3 p.m. February 13th, and again at 3:40 p.m. when he arrived at the hospital. Coramine 1.5 cc. was also injected. Further emergency measures consisted of copious gastric lavage with instillation of magnesium sulphate and a venoclysis of 10 per cent. dextrose solution. (Later analysis of gastric contents and urine specimens showed a high barbiturate content.) Picrotoxin was started at 5:20 p.m. by intravenous injections at approximately the rate of 1 mgm. per minute, close observation being maintained meanwhile for twitching or change in the activity of the vital systems. At 5:54 p.m. (after the injection of 53 mg. of picrotoxin over a period of 34 minutes) generalized muscular twitching was evident, so the injection was stopped for ten minutes. Then more picrotoxin was given until 6:10 p. m. when the patient had three spasmodic, generalized convulsions lasting fifteen to twenty seconds (after a total dosage of 65 mg. picrotoxin in 50 minutes). Picrotoxin was then withheld until 7:30 p.m. During the above procedure, the patient was also given small doses of caffeine (0.25 gm.) and coramine (1 cc.) on alternate hours. He was then moved from the emergency room to a ward room, where 500 cc. of citrated whole blood was given. After nine more milligrams of picrotoxin were given (7:40 p.m.), he responded slightly to questions and sensory stimulation and the deep reflexes were obtained, but on discontinuing the drug he lapsed back into coma. Profuse mucous secretion was aspirated from his throat. At 9 p.m. he responded only slightly to an injection of 1 cc. of coramine. At 9:30 p.m. 1500 cc. of 5 per cent, glucose was given intravenously. Between 10:40 p.m. and 12:40 a.m. the patient was given 21.75 mgm. picrotoxin with two ten minute periods of lucidity during which he was able to drink fluids and speak a few words in response to questions, but he soon lapsed back into coma when the drug was discontinued. Caffeine, coramine, ephedrine, and adrenalin in small doses were continued at intervals throughout the night. At 3 a.m. (February 14th) the patient's blood pressure dropped suddenly but it recovered quickly to stimulation and the intravenous injection of 50 cc. of 50 per cent. glucose. At 4:15 a.m., 500 cc. of 10 per cent. glucose were given intravenously. The blood pressure now remained fairly stable at 100/70 until 10 a.m. when it dropped to 90/50, but quick response again occurred when 50 cc. of 50 per cent. glucose were injected intravenously. There was another sudden drop at 1:15 p.m. with good recovery upon immediate support. The patient continued to respond more successfully throughout the day. A total dosage of 109 mg. of pictrotoxin was used.

On February 15th physical findings suggested a left-sided pneumonic process in the midlung field which was verified by roentgenograms. The usual routine of isolation, sputum typing, blood, and throat cultures was followed, but the organisms were not identified. Resolution was apparent February 19th, with total recovery from the bronchopneumonia by February 24th. Following February 16th he was much more alert, gave

Time	Treatment Other Than Picrotoxin	Picrotoxin	Blood Pressure	Response to Treatment
Oct. 6, 1937				
11:00 p. m.				Patient found sleeping in bed.
Oct. 7				
10:50 a. m.	Admitted to hospital			Deep coma, cyanotic, and cold. All reflexes absent; musculature, flaccid; no response to painful stimuli.
11:15	Gastric lavage			
3:30 p. m.	1000 cc. 5% glucose in Ringer's solution			No change
5:30	Metrazol, 1 cc.			No response
7:30	Metrazol, 1 cc. Caffeine sodiobenzoate, 0.50 gm.			No response
9:02		3 mgm. intravenously	96/66	Patient still in deep coma, cyanotic, and absent reflexes.
9:25		3 mgm. intravenously	96/68	
9:42		3 mgm. intravenously	95/68	
10:07	1000 cc. 20% glucose	6 mgm. intravenously	102/64	Wrinkled forehead, moved mouth.
10:25		3 mgm. intravenously (Supply exhausted)	100/66	Moved head; fingers and toes pink and warm.
10:52	Caffeine sodiobenzoate 0.5 gm.			Motor activity subsiding; several large blood clots passed vaginally.
11:45		6 mgm. intravenously	100/66	No motor activity.
Oct. 8				
12:04 a. m.		6 mgm. intravenously	96/66	Yawning.
12:18		6 mgm. intravenously (2nd supply exhausted)	100/66	Moving head and legs; facial movements; corneal and pharyngeal reflexes present; general restlessness; Babinski normal.
1:00	Coramine 1.5 cc.			Motor phenomena subsided; no movements or reflexes.
3:30	Coramine 1.5 cc.			No response
5:15	Coramine 1.5 cc.			No response
7:15	Coramine 1.5 cc.			No response
8:30				Complete abortion.
8:35	Pituitrin, 1 cc.			
8:40	Ergotrate, 1 cc.			Patient quiet and inactive.
10:00	2000 cc. 10% glucose in Ringer's solution			No change.
11:00	Caffeine sodiobenzoate 0.5 gm.			No response
2:04 p. m.		6 mgm. intravenously	94/70	No motor activity.
2:17		3 mgm. intravenously	98/80	Raised head; wrinkled brow; moved eyelids; attempted to swallow; general restlessness.
3:06		3 mgm. intravenously	100/78	Moved eyelids; attempted to swallow; general restlessness.
4:25		6 mgm. intravenously	105/80	Restlessness continues.
4:55		3 mgm. intravenously		Less restless.
9:00		3 mgm. subcutaneously		
11:00		3 mgm. subcutaneously		
Oct. 9				
1:00 a. m.		3 mgm. subcutaneously	100/68	
3:00		3 mgm. subcutaneously	98/58	
5:00		3 mgm. subcutaneously 3 mgm. subcutaneously		Restless; opens eyes when name is called; crying and moaning.
7:00		3 mgm. subcutaneously	98/58	
9:00		3 mgm. subcutaneously	108/54	Restless for 20 minutes after injection.
10:00		3 mgm. subcutaneously	104/56	Restless.
11:00	2500 cc. 10% glucose in Ringer's solution	3 mgm. subcutaneously	108/56	Moving head and legs; yawning.
1:00 p. m.		3 mgm. subcutaneously	108/56	
2:00	Gavage feedings	3 mgm. subcutaneously	110/54	Restless.
3:00		3 mgm. subcutaneously		
4:00	Blood transfusion 525 cc.			
7:00		3 mgm. subcutaneously	110/80	Very excitable.
9:00	1200 cc. Ringer's solution		98/60	Attempting to speak.
Oct. 10				Very restless; talkative; irrational; sleeps much of the time.
Oct. 11				All reflexes normal; vision blurred; fairly rational; emotionally unstable; still very sleepy.
Oct. 12				Rational and very talkative; abnormally cheerful; general condition good.
Oct. 13				Transferred to Division of Psychiatry.

many evidences of hallucinations and delusions of a persecutory nature. He was disoriented, misidentified people, feared attack, condemned himself for wrongdoing. The mood was depressed. He continued in this state until February 21st, when he became more cheerful. Efforts to help him overcome his emotional problems were not effective and stopped with his discharge on March 12th. His physical condition on that day was much improved. Psychiatric diagnosis was schizophrenia of the paranoid type. The possibility of cortical injury due to the drug could not be evaluated because of the psychosis.

Unfortunately we cannot evaluate accurately the part played by picrotoxin in the physical recovery of this patient. He seemed so poor a risk that many stimulants were given, not to mention the urgent necessity of maintaining vascular support by large amounts of blood, glucose, and fluids.

COMMENT

Because of the wide variations in the lethal dose of barbiturates, it is not known that either of these patients had taken lethal doses of the drug. However, the lapse of many hours before treatment was instituted (twelve to eighteen hours in Case 1 and twenty-one hours in Case 2) allowed complete absorption of the ingested drug to take place. The deep coma, absence of reflexes, flaccidity of musculature, and cyanosis present on admission pointed to a serious poisoning in both cases.

In order to fully judge the therapeutic merits of a drug, it is important that no other treatment be employed. Unfortunately, this condition could not be observed in either case. It has been pointed out by Bleckwenn and Masten[8], Rovenstine[7] and others that other forms of treatment should not be sacrificed to the exclusive use of picrotoxin. They recommend the additional use of gastric lavage, purgation, continuous oxygen, diuresis by parenteral fluids and intravenous sucrose, administration of dextrose to prevent acidosis, and blood transfusions. In Case 2, the repeated cardiovascular collapse made additional supportive measures seem lifesaving necessities. However, in Case 1, the spacing of the various treatments made the beneficial effects of the picrotoxin seem fairly certain, whereas the other stimulants seemed ineffective. In both cases, picrotoxin repeatedly produced definite awakening phenomena which subsided on withdrawing the drug.

A complete abortion occurred in Case 1 shortly after the onset of picrotoxin therapy. It is debatable whether the abortion resulted from the treatment or from the barbiturate poisoning itself. Anoxemia, which was present to a marked degree, is known to be a cause of uterine contractions. However, the experimental work of Kunisho[11] suggests that the picrotoxin may have been the cause of the abortion. He found that small doses of picrotoxin always stimulated the uterus of the rabbit.

Bronchopneumonia is a frequent complication of barbiturate poisoning, and at times it may cause a fatal termination in cases that would otherwise recover. The decreased or absent pharyngeal and associated reflexes, allowing aspiration, are probably important etiological factors. Picrotoxin, by shortening the period of coma, should eliminate or mitigate this important complication in many instances. It is conceivable that the abortive bronchopneumonia in Case 2 may have proved fatal if the period of coma had been prolonged.

The picrotoxin therapy was carried to the point of generalized convulsions in Case 2. It is of some interest that this "shock therapy" failed to alter the schizophrenia which was present. The dosage of picrotoxin which produced the convulsion has been recorded. In general, we approve of the recommendation by Bleckwenn and Masten[8] of administering 1 mg. per minute, but the intoxication of this patient was so advanced that we gave the drug more rapidly. Because of the preexisting schizophrenia, an evaluation of possible cortical injury by the convulsion is not feasible.

SUICIDAL WARNINGS

Both of these patients gave ample warning of their intention to suicide. Physicians who see patients in depressed moods, whatever the cause, may well be alert to this possibility. Patients who express deep feelings of futility, especially if they are tense, anxious or hostile are easily detected. Those who conceal their depressive content, but who are retarded in speech, action and physiological functions, as well as those who think they are fighting overpowering odds should be questioned regarding their opinions about the value of living, impulses to hurt themselves, etc. The second case was frankly delusional and asked several people including policemen for help because he thought he was being pursued by enemies. Since it is difficult to protect these patients against themselves they

should be placed in a hospital which is competent to deal with them. It should be remembered that one or more unsuccessful attempts at suicide are not prophylactic, and that some patients are eventually successful after vigilance is relaxed because they are thought to be improving.

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TULAREMIA AND ITS TREATMENT WITH SERUM

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Tularemia is caused by Bacterium tularense, a small, non-motile, Gram-negative organism, which exhibits marked pleomorphism in its growth on special culture media. Martin,[1] in 1907, reported the first case of tularemia in man, and attributed this infection to the skinning and dressing of wild rabbits. Since then numerous animals and insects have been found to transmit the disease.

Pearse,[2] in 1910, described nine cases of "deer-fly fever," which followed horse-fly bites. McCoy and Chapin,[3] in 1912, isolated an organism from ground squirrels dying from a "plague-like" disease in Tulare County, California. They called the organism Bacterium tularense. Francis[4] decided that the two conditions were the same, and named the new disease tularemia in 1919.

Parker, et al,[5] found the common wood tick to be a host and transmitter of tularemia. They found the infective agent present in ticks collected from horses, mountain goats, woodchucks, mountain rats, and Columbian ground squirrels. They also noted the presence of the disease in the snowshoe rabbit, the jack rabbit and the coyote.

New animal hosts and insect vectors have continued to be discovered, and tularemia has been found to be transmitted by the domestic cat, the opossum, the fox squirrel, the muskrat, and even by quail. In 1931, Simpson[6] reported wild rats, meadow mice, woodchucks, and sheep as transmitters of the disease, and stated that the horse, cow, domestic chicken and turkey apparently are not susceptible to either natural or experimental infection with Bacterium tularense. Francis,[7] in 1937, stated that ten cases of tularemia had occurred from dressing squirrels, opossums, sage hens, coyotes, deer, red foxes, bull-snakes, muskrats and skunks, and Miller[8] reported the transmission of this disease by the fin prick of a catfish.

The ingestion of insufficiently cooked wild rabbit meat has caused 20 cases of the disease in the United States, of whom 12 have died.

In Russia the principal source of tularemic infection for man is the water rat, 1,000 cases occurring in 1928, in persons who skinned them for their pelts. In 1935, Karpoff and Antonoff[9] reported an epidemic due exclusively to water. Forty-three cases were examined and observed who drank water from a brook which was thought to have been contaminated by water rats. The presence of the micro-organisms in the infected water courses was proved experimentally and bacteriologically.

In 13 laboratories in the United States, England, Japan, and Russia, 41 workers contracted the disease performing necropsies on infected guinea pigs and rabbits or from handling infected living ticks. It is interesting to note that tularemia is transmitted from animal to animal and from animal to man but that there is not a proved case of transmission from man to man.

The geographical distribution of tularemia was summarized in January, 1937, by Francis[7] as follows: Human cases have been found in the

District of Columbia and in all the states in the Union except Vermont and Connecticut. The disease was reported in Japan in 1925, in Russia in 1928, in Norway in 1929, in Canada in 1930, in Sweden in 1931, and in Austria in 1935. Thus, it is evident that what was once considered wholly an American disease has been found to be widely distributed throughout the world.

It has been found that in the majority of cases inoculation occurs as the result of a perforating wound as that produced by a sharp fragment of bone. However, the organism may pass through the unbroken skin. The incubation period varies from one to five days.

The diagnosis of tularemia is suggested by the history of handling wild rabbits or having been bitten by a tick or horse-fly. The diagnosis may be confirmed by the intracutaneous test on the second day, by blood cultures or by the agglutination test. Agglutinins appear during the second week, reaching the maximum of 1:1280 to 1:2560 in four to seven weeks, and persist for life. These agglutinins will occasionally cross-agglutinate Bacterium melitense and Bacterium abortum and have been mistaken for undulant fever by serologists, but the proportionately higher titer reached by tularemia agglutinins leaves little doubt as to the diagnosis. The clinical manifestations are well known. The four distinct types are ulceroglandular, oculoglandular, glandular and typhoidal.

The mortality from tularemia has been reported as low as 1.4 per cent. by Perret,[10] 5 to 7 per cent. by Flinn[11] and as high as 10 per cent. by Baer.[12] Francis[7] reports that the illness lasts about three weeks and is followed by a slow convalescence covering a period of two to three months. He states that most patients recover without any bad after effects, but that about 5 per cent. die.

Foshay[13] introduced serum therapy in 1931 and has used this serum with success in 240 cases. He found that the best results were obtained when the serum was given before the 12th day of the disease. The dose used was 15 cc. of the serum in the vein on two successive days. In cases of septicemia 60 cc. were used. Serum sickness occurred in 42 per cent. of cases who received goat serum and in 63 per cent. of those receiving horse serum.

Since Sharp and Dohme have introduced lyophilized antitularemic serum I have treated two cases, which I think are worthy of reporting.

Patient J. H., Male, 60, gave a history of cleaning 20 rabbits on 11-26-38, and three days later, 11-29-38, there was a sudden onset of chills, fever, generalized body-ache and tired feeling. On 12-1-38 a lesion was noticed on the right middle finger associated with lymphadnopathy of right epitrochlear and axillary glands. The patient ran daily chills and fever ranging between 101 and 104.8. The patient was given 500 cc. of a 25 per cent. glucose solution daily intravenously and antipyretics every four hours. The temperature remained up to 103.5, when on 12-6-38, 15 cc. Lyovac antitularemic serum was given intravenously. Twelve hours later the temperature dropped to 98 and the next day, 12-7-38, the abscess on the right middle finger ruptured. The next day, 12-8-38, 15 cc. Lyovac antitularemic serum was again given intravenously, and four days later, 12-12-38, the patient developed severe serum fever, with a temperature of between 99 and 102, characterized by edema of lips and eyes and generalized urticaria which was treated by adrenalin, calcium therapy and ephedrine. This allergic reaction remained for only one day, although the temperature continued up for six days. On 12-15-38, the patient was given 20 cc. of whole blood intramuscularly into the right buttock. On 12-16-38 the agglutination test for tularemia was positive in a dilution of 1:640. On 12-19-38 20 cc. more blood was given intramuscularly, and on 12-25-38 15 cc. more Lyovac antitularemic serum was given intravenously, and one hour later the patient succumbed.

Patient A. C., female, aged 38, gave a history of cleaning a rabbit on 12-5-38, and six days later, 12-11-38, she had fever, chills, sweats and tired feeling. A lesion was noticed on right ring finger associated with lymphadnopathy of right epitrochlear and axillary glands. She was given 15 grains of sulfanilamide along with antipyretics and alkalis, but she showed a hectic temperature of between 96° and 102.1° until 12-23-38, when 15 cc. Lyovac antitularemic serum was given intravenously. In two days the temperature returned to normal and remained normal. Thereafter the patient complained only of extreme tired feeling but no symptoms of chills or fever. Patient did not exhibit any signs of serum sickness.

DISCUSSION

Although one of these cases died, it is evident that Lyovac antitularemic serum is effective in treating tularemia ,and this new form of serum is convenient to administer.

CONCLUSION

Tularemia is a relatively common disease in this country, and many animals are known to transmit this infection, although it is not transmitted from man to man.

Lyovac antitularemic serum is effective in the treatment of infection by the Bacterium tularense.

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THE TREATMENT OF HEMORRHAGE FROM THE GASTRO-INTESTINAL TRACT

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A discussion of the treatment of hemorrhage from the gastro-intestinal tract falls into two categories depending upon whether the hemorrhage is of such magnitude that symptoms of shock develop in rapid order, or whether the hemorrhage is in itself not severe but rather a sign directing attention to the lesion causing it.

1. Severe gastro-intestinal hemorrhage which in a relatively short time is fatal, does not occur very often but hemorrhage of sufficient magnitude to produce symptoms of shock is not very rare. In the latter instances immediate treatment is concerned with supportive measures. The patient is put to bed as quickly as possible and as near the place of the accident as possible with the minimum of transportation. Long automobile or train rides in order that the patient may reach home or a hospital should be prevented. The patient is advised to lie as quietly as possible; according to some nothing is permitted by mouth for at least 24 to 48 hours, others permit limited bland feedings with or without alkalis; sedation by means of morphine is prescribed and constant attendance, preferably by at least a nurse is of utmost importance. Application of ice bags to the upper abdomen in cases of hematemesis or to certain regions of the colon in severe melena is a time honored procedure but is of questionable value. If it appears desirable to favor more rapid clotting of the blood, an intramuscular injection of 10 cc. of 10 to 20 per cent. calcium gluconate may be given every four hours for two to four injections.

When possible frequent blood pressure readings should be recorded as these, together with the pulse rate, afford accurate means of gauging the severity of the shock due to loss of blood, and continued drop in blood pressure with increasing pulse rate may be an indication of further hemorrhage before it becomes manifest as hematemesis or melena. Blood counts at the time of such hemorrhages give little information.

The question of parenteral fluids depends upon the general condition of the patient and the arrest or continuance of the hemorrhage after the measures outlined have been instituted. Obviously, rapid intravenous injections of fluids or blood are contraindicated as these would raise the blood pressure which in turn favors renewal of the hemorrhage.

Hypoclysis of Ringer's solution or isotonic saline may be started shortly after the patient is put to bed and administered slowly so that 1½ to 2 hours are required for the injection of 1,500 cc. This may be repeated in eight or ten hours. If there is evidence of continued hemorrhage, blood transfusions are indicated and should be administered in amounts of 100 to 200 cc. at intervals of one to two hours rather than the entire transfusion (600 to 700 cc.) in a relatively short period. On the other hand continued severe bleeding may require more rapid replacement of blood and fluids. The general condition of the patient serves as the best guide to the manner of administering parenteral fluids, the underlying principle for the management being that a certain degree of shock is to be expected and accepted, and the remedial measures employed are to be so chosen and timed so that over-enthusiastic treatment does not defeat its own objectives.

The common cause of severe hematemesis is *peptic ulcer*. Immediate operation for excision or exclusion of the bleeding lesion is not generally advised because experience has shown that under conservative management the ultimate recovery from any given severe hemorrhage occurs

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in the great majority of cases where the severe bleeding is the first or second accident. Upon recovery from such accidents medical management for peptic ulcer is instituted.

Where there is a history of repeated attacks of severe hemorrhages which have occurred while the patient was under medical management, immediate operation is considered when response to conservative measures is not prompt. Adequate blood transfusion immediately precedes laparotomy which should be done under local anesthesia whenever possible. Because of the previous medical management there is some definite preoperative conception as to the location of the ulcer and excision is the treatment of choice, with or without gastro-enterostomy. Large chronic ulcers near the pylorus usually call for pylorectomy followed by a Billroth or Polya type of gastro-intestinal anastomosis. Peptic ulcers with histories as just outlined above usually exhibit patent sclerotic arteries in their craters. Repeated hemorrhage from stoma ulcer is indication for resection of the anastomosis, with or without its reconstitution.

Esophageal varices. Sudden hematemesis may be due to esophageal varices which in turn are the result of interference with the venous portal drainage. The common causes of such varices is cirrhosis of the liver of various types. The quantity of hematemesis may be sufficient to result in shock in which case the immediate treatment is as outlined above. Repeated attacks of severe hematemesis from esophageal varices may occur at irregular intervals and may eventually prove fatal.

In elderly debilitated patients with advanced cirrhosis the treatment is essentially symptomatic including blood transfusion when necessary. In patients whose condition is at least fair, or in younger patients with so-called Banti's disease, attempts at obliteration of the esophageal varices is indicated as a palliative measure. Various procedures have been recommended for this including laparotomy for the injection of the varices by sclerosing solutions, or splenectomy accompanied by removal of the gastric brevia venous branches that drain into the splenic vein, and ligation of the left gastric veins.

2. When the hemorrhage has not been of sufficient magnitude to cause general signs and symptoms of shock, and therefore does not of itself present an emergency problem of major importance, treatment is directed to the lesions causing it.

In such cases blood studies are made to determine the degree of anemia, since slight bleeding over prolonged periods often results in a marked depletion of red blood cells and hemoglobin. When surgical intervention is to be performed, preliminary blood transfusion is indicated for such anemia and preparations for post operative transfusion are also made.

Carcinoma of the stomach. Severe hemorrhage is not often due to carcinoma of the stomach, but continued loss of small amounts of blood in the stool is the rule; small to moderate hematemesis may occur. The treatment, of course, is resection according to the standard operative procedures when possible, after suitable preparation.

Papillomas of the stomach. Benign papillomas of the stomach are not frequently diagnosed clinically. They often are the seat of repeated hemorrhages which, however, are not severe at any one time but because of continued loss of blood may be the cause of moderate or profound anemia. In elderly patients such lesions not very rarely occur concomitantly with pernicious anemia. Gastrotomy and excision of the tumor is indicated. This procedure is relatively simple because they are usually attached by a narrow pedicle. In rare instances a papilloma situated in or near the pyloric orifice passes forward into the first portion of the duodenum; limited pylorectomy may be performed in these cases.

Carcinoma of the small bowel. While obstructive symptoms may in some instances be the first evidence of such neoplasms, a marked secondary anemia may be the principal finding before there is evidence of obstruction, due to continued small hemorrhages which might only be appreciated upon examination of the stool for occult blood. Marked secondary anemia, the continued presence of occult blood, and failure to observe a lesion in the stomach or colon by fluoroscopy and proctoscopy justifies, in the writer's opinion, an exploratory laparotomy with the diagnosis of small bowel neoplasm.

Carcinoma of the colon. Varying degrees of secondary anemia occur with carcinoma of the colon. These are due to continued loss of small quantities of blood over prolonged periods. The blood is passed with the feces or there may be stools composed for the most part of mucus and

blood. In some instances, especially with carcinoma of the cecum or ascending colon there may be a very severe degree of anemia without the patient giving a history of much loss of blood with the stool. Such cases have raised the question of whether some types of colon carcinoma elaborate a factor which markedly inhibits hematopoesis.

Although not very frequently encountered, some carcinomas of the colon may be the cause of sudden hemorrhage which is of sufficient magnitude to produce shock and thus call for emergency treatment for the loss of blood. The magnitude of the hemorrhage does not always parallel the size of the neoplasm, as small carcinomas may give rise to severe hemorrhage as a first sign and patients with large tumors may not be aware of passing blood per rectum.

The treatment of carcinoma of the colon is excision according to the standard procedures depending upon the location of the growth.

Papilloma and papillomatosis of the colon (and other benign tumors). Single or multiple papillomas of the colon (or other pedunculated benign tumors) may be the cause of sudden severe hemorrhage or continued loss of small quantities of blood over prolonged periods. Diagnosis is possible by fluoroscopy if the lesions are in the sigmoid or higher and if they are sufficiently large to produce filling defects. The lesions may be visualized through the proctoscope if they are low enough in the rectal colon. In the latter instance they are excised or destroyed by fulguration in one or more stages. When situated higher in the colon laparotomy for excision is indicated. Fulguration by means of a proctoscope through an incision in the colon may be possible. A single large papilloma may be removed by colotomy. Segments of colon exhibiting several bleeding papillomas are best resected, not only in order to arrest hemorrhage but also because such lesions constitute a precancerous condition.

Hemorrhoids and anal fissure. Proper treatment of hemorrhoids or anal fissures will of course put an end to the small hemorrhages which commonly result from them. On the other hand, it is good practice not to be satisfied that all the loss of blood that the patients complain of is due to such conditions and a proctoscopic examination prior to or at the time of operation should be routinely performed especially in middle aged or elderly patients. If this is done in any large series of cases unsuspected papillomas and even carcinomas of the rectal colon will be occasionally discovered.

Hemorrhage from the alimentary canal may occur in a variety of non-surgical diseases, such as the leukemias and purpura hemorrhagica. Treatment is directed to the underlying conditions. Severe intestinal hemorrhages in acute leukemias is a bad prognostic sign and may be treated by transfusion. In selected cases of chronic purpura hemorrhagica splenectomy results in arrest of the general hemorrhagic tendencies. The bloody diarrheas of ulcerative colitis may produce severe anemia and this is treated by blood transfusion. Ileostomy, in an attempt to alleviate symptoms, including bleeding from the colon, may in some cases be considered.

PATHOLOGY AND TREATMENT OF OTITIC AND RHINOGENIC MENINGITIS

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During recent years numerous cases of otitic and rhinogenic meningitis have been published as cured through the administration of sulfanilamide and its derivatives. No ten-year period in the past showed as many recoveries from meningitis as occurred in one recent year. There is no doubt that the improvement in the treatment of this disease represents a great advance in medicine. This is particularly interesting when one recalls that forty years ago there was much discussion as to the advisability of surgery in meningitis.

Considering this progress more critically, two questions arise. Is it due entirely to the administration of sulfanilamide? Can the entire problem of otitic and rhinogenic meningitis be looked upon as solved? It is not easy to answer these questions. A review of the recent literature reveals that the cases which have recovered have been extensively published, but those who died in spite of modern treatment are not reported—at least not so extensively reported. It has been repeatedly indicated that since the advent of sul-

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fanilamide, the mortality rate has fallen from nearly 100 per cent. to a point between 20 per cent. and 45 per cent. (McCaskey). The significance of these numbers is questionable, however, as the course of the disease varies with the pathway of infection from the ear or nose to the meninges. This has been pointed out by Eagleton and others.

To answer the questions stated above, seventy cases of meningitis treated with sulfanilamide have been collected, chiefly from the American literature. In each case there was cloudy cerebrospinal fluid with cells, mostly polymorphonuclear leucocytes, varying from 540 to 17,000. In all cases the spinal fluid was positive for organisms in both smear and culture. Fifty-seven cases showed hemolytic streptococci, and ten cases showed pneumococci, type III predominating.

The majority of authors consider cloudy fluid containing organisms as significant for a generalized meningitis. However, it should be pointed out that there are many cases of generalized otitic and rhinogenic meningitis in which these changes are not found. Cases have been seen in which no bacteria could be found in the cerebrospinal fluid up to the death of the patient, and cases in which there were organisms, but not a marked increase in cells. In spite of these findings meningitis was discovered at autopsy. However, it is certain that in the majority of cases the fluid is cloudy, and organisms are present.

Cases of primary meningitis only have been considered. By this we mean cases in which the meningitis originated from a suppuration within the temporal bone. Cases of secondary meningitis, following an intracranial complication such as sinus thrombosis or brain abscess, have not been considered, because the pathology is different from that in the primary form.

Only cases in which the generalized meningitis was ushered in by a pachymeningitis externa have been used in our statistics, although these cases in reality belong to the class of secondary meningitis.

The seventy cases of otitic and rhinogenic meningitis treated with sulfanilamide can be separated into six groups.

The largest group, fifty-one cases, are those beginning with acute otitis, followed by mastoiditis and meningitis. Most of these patients were young, between one and 25 years of age. Applebaum reported one case 43 years old, and Causse, Loiseau and Gieselbrecht had one 46 years old. Both cases had acute otitis, meningitis and hemolytic streptococci in the spinal fluid. Both were treated with sulfanilamide or prontosil and neither was operated upon. In spite of this the patients recovered. If they really suffered from otitic meningitis, which seems doubtful, they are contrary to the usual experience.

In a group of eight cases meningitis followed simple mastoidectomy. These were young patients from four to 14 years of age. The meningeal symptoms appeared three days to two years after the operation.

There were five cases of meningitis following chronic otitis, with or without cholesteatoma. The ages were eight to 15 years. Besides the administration of sulfanilamide, a simple mastoidectomy was performed.

Two cases of meningitis followed recurrent otitis. Labyrinthitis preceded meningitis in two cases. There were two cases of rhinogenic origin.

In order to obtain an accurate estimate of the efficiency of sulfanilamide, 64 cases of otitic and rhinogenic meningitis were collected, which were not treated with sulfanilamide or its derivatives. All cases had cloudy cerebrospinal fluid, with cells up to 20,000. Hemolytic streptococci were present in 41 cases and pneumococci in 41 cases. The treatment followed with a great variety of methods, including incisions of the dura, blood transfusions, anti-streptococcus serum, solganal, zylotropin, urotropin, staphylococcus vaccine, trypaflavin, vuzin, intraspinal injections of hypotonic sodium chloride, autogenous serum, colloidal silver, mercurochrome, anti-meningococcus serum, acriflavin, intracarotid injection of Pregl's solution and forced drainage of the spinal canal.

These 64 cases can likewise be separated into distinct groups. The largest number, 37 cases, began with acute otitis and mastoiditis. The great majority of patients were young, two to 25 years of age. Dan McKenzie in 1915 reported one case in a 50-year old patient and Cadham had one 34 years of age. Both cases had streptococci in the spinal fluid, and followed acute otitis. In one, dural drainage was performed, while in the other anti-streptococcus serum was administered. No mastoid operation was per-

formed, so that again the question arises as to whether these cases were otitic meningitis.

The next group, six cases, acquired meningitis following simple mastoidectomy. Meningeal symptoms appeared four to eight days postoperatively. The age incidence was eight to 15 years. Only one case was older, 28 years.

In seven cases, meningitis followed chronic otitis, with or without cholesteatoma. Five were young, one was 34, and one was 35. There were no cases following recurrent otitis. Seven followed labyrinthitis. Six were of rhinogenic origin and one followed a rhinopharyngitis.

Considering this great number of cases, the following conclusions can be drawn:

1. Of all forms of otitic and rhinogenic meningitis cured those following acute otitis are most common (66 per cent). In the following discussion we must therefore deal particularly with these cases.

2. A definite relation of prognosis to age is found. The greatest number of cured cases, regardless of treatment, were from six to ten years of age. This finding agrees with that of Neumann, who reported 59 cases of meningitis following acute otitis. Twenty-two patients (37 per cent.) recovered, but only one of these was older than 15 years. It must be admitted that Neumann's cases differ from ours in that only six of his 22 cases had bacteria in the spinal fluid, while all of our 88 cases showed organisms.

3. The comparison between the cases treated with and without sulfanilamide, at first, would lead one to believe that there is no difference between those treated with, and those treated without sulfanilamide. This, however, would be wrong. If one considers that our sulfanilamide cases were published in a period of two years, while the cases recovered without the drug were treated over a period of 39 years, it is evident that the advent of sulfanilamide has definitely increased the chance of recovery from a general purulent meningitis.

In answering the question as to whether or not the improvement in prognosis is entirely due to sulfanilamide, it may now be concluded that sulfanilamide while not the sole factor in recovery, has definitely improved the prognosis of this disease.

It is not fair to exaggerate the efficiency of sulfanilamide, particularly to the point of considering mastoid surgery as unnecessary. On the contrary, the advice Jansen gave many decades ago, namely, that the first symptom of meningitis is the last summons to operate, may be held valid today. This point must be emphasized, because among our sulfanilamide cases there are 13 instances which have been reported as recovered from an otitic meningitis, without an operation on the mastoid. Among these were two cases over 40 years of age, and five between one and five years. Since our statistics show that the prognosis of meningitis in these periods of life is not good even after mastoidectomy, one becomes suspicious that some did not suffer from otitic meningitis.

Our present modus procedendi in cases of otitic meningitis is as follows: In acute cases we perform a simple mastoidectomy, and in chronic cases a radical mastoidectomy, widely exposing the dura in both instances. To prevent adhesions within the leptomeninges we withdrew about 30 cc. of cerebrospinal fluid, and compensate with an injection of 20 to 25 cc. of air. In order to combat the infection, we administer 1 cc. of prontosil for each pound of body weight during the first 24 hours, 0.5 recommended by Long and Bliss. If sulfanilamide is used, ¾ grain per pound body weight is given in the first 24 hours. The dose is greatly reduced after this, when the maximum blood concentration has been obtained. To combat and prevent general debility, blood transfusions are given.

There is no question that this type of treatment is capable of markedly increasing the number of recoveries from otitic meningitis. However, the question arises as to whether this has completely solved the problem of this disease. Unfortunately, it has not. Since the prognosis is dependent on so many factors, it cannot be expected that the advent of a new drug can solve the entire problem.

In order to point the way for further investigation, we wish to enumerate the chief factors which influence the prognosis of otitic and rhinogenic meningitis.

1. The general physical condition of the patient, which is in turn dependent on the patient's age. We must admit that the prognosis in elderly patients is gloomy, especially when the cardiovascular system is diseased. This is proved by statistics published by Hewell and Mitchell. They report 28 cases of pneumococcic meningitis, cured by use of sulfanilamide. Among these 28 cases

only five (18 per cent.) were older than 25 years, but in none was there an otitic meningitis. They also report eight cases who died in spite of sulfanilamide. Among these eight, three cases (37 per cent.) were older than 25 years.

2. The strain and virulence of the bacteria. It is an old experience that infection with pneumococci, especially type III, is more dangerous than infection with streptococci. There have, however, been a great number of instances reported as recovered from pneumococcus meningitis by the administration of sulfanilamide. It must be admitted that in a certain number of these recovered cases the virulence of the bacteria was low, as shown by the fact that the organisms appeared on the smear, but not in the culture or were found only once on culture.

3. The intensity of the encephalitis. Microscopic examinations have shown that every meningitis is accompanied by pathological changes within the cerebral cortex. These changes may be very slight, appearing only as glial reaction; or they may be very marked, so that a true encephalitis is found. There is no doubt that the more marked the encephalitis, the worse the prognosis. As the encephalitis is the cause of a great number of the well-known symptoms of meningitis, we can follow Neumann's distinction between cases of meningitis with but few clinical symptoms, and those with an abundance of symptoms. In the latter case, the prognosis becomes worse. Among these clinical symptoms Neumann places great stress on the presence or absence of the Babinsky sign.

4. The time of operating. As pointed out before, the operation must be performed as early as possible, therefore an early diagnosis of meningitis is important. This is sometimes difficult to make, particularly in cases with few clinical symptoms. In such cases, only a spinal puncture can guide one to the diagnosis. It should, therefore, be performed in every otologic and rhinologic case which is suspicious for meningeal involvement. Furthermore, a thorough chemical and bacteriological study of the spinal fluid should be made, as advised by Kopetzky. In interpreting the results, it should not be forgotten that an increase of cells in the spinal fluid may be found in acute otitis and mastoiditis in children and young persons (H. Bjoerk). This is particularly true in acute otitis following scarlet fever, and indicates meningeal involvement, but not a true otitic meningitis.

5. Pathway of the infection. Every textbook minutely describes these pathways, but does not place emphasis on the question as to whether or not the infection invades the meninges by one pathway only, or by several pathways simultaneously. I briefly term the former type of infection "the single invasion of the meninges," and the latter, "the multiple invasion of the meninges." As an example of multiple invasion the following cases may be cited.

Case I. A woman, 50 years old. On February 1, 1929, she noticed an earache on the right side. She ran a temperature of 100, and gave the impression of a very ill patient. On February 2nd a paracentesis was performed, which procedure was followed by syncope. On February 4th a completely developed meningitis was diagnosed. The cerebrospinal fluid was cloudy and contained hemolytic streptococci. The operative findings were an almost normal mastoid process, a necrosis of the tegmen of the mastoid process, and a circumscribed necrosis of the dura. The patient died the next day, and autopsy revealed meningitis and cor adiposum.

Microscopic examination of the temporal bones revealed an inflammation of the skin of the external canal, and an acute otitis with a very acute mastoiditis. The infection had travelled from the middle-ear into the meninges along congenital dehiscences in the tegmen typmani, and along the blood vessels perforating the tegmen tympani.

Case II. A man, 30 years old. On June 8, 1935, he complained of headache and nasal obstruction. The right half of the nose was filled with polys, with pus between the polyps. He ran a temperature of 100. On June 9th the polyps were removed. After the operation he vomited, and ran a temperature of 102.2. On June 10th the temperature rose to 103.6. Next day it was 103.8, and he vomited again. The right eye protruded, but no meningeal symptoms were found X-ray examination revealed cloudiness of all paranasal sinuses on the right side. The spinal fluid was normal. The right frontal, ethmoid, and sphenoid sinuses were opened, and all were filled with pus and discolored granulations. On June 12th, he complained of occipital headache, and a marked leukocytosis of the blood was found. On June 14th the cerebrospinal fluid was cloudy, but no organisms were found. The fluid which was removed was replaced by air. The dura of the anterior fossa was widely exposed. On June 16th exitus occurred. Autopsy revealed a meningitis which had affected the base of the brain, and the convexity of the *left* frontal lobe.

Microscopic examination of the nose showed that the infection had travelled from the nose into the meninges along the sheaths of the olfactory bundles on both sides, thus infecting the meninges on the left, on which side no nasal polyps had been found.

It is evident that in both cases the infection traveled simultaneously along many pathways into the meninges. We meet essentially the same conditions if the infection invades the meninges along the blood vessels perforating the posterior wall of the frontal sinus, or the roof the sphenoid, or the posterior surface of the pyramid. Finally, we meet the same conditions, if many pneumatic cells perforate into the meninges simultaneously, as sometimes happens in mucosus otitis.

In all these cases the meninges are simultaneously infected from many sources so that the meningitis very quickly is generalized without having been circumscribed, or having been circumscribed for only a very short period. This pathologic condition holds true particularly if the meningitis originates in the anterior or middle fossa of the skull. Alexander, as early as 1908, pointed out that a meningitis originating in the posterior fossa has a definite tendency to stay circumscribed in the posterior fossa for a long period, while a meningitis originating in the middle fossa very quickly travels into the posterior fossa.

This multiple invasion of the dura we most frequently find in acute otitic meningitis, and in rhinogenic meningitis where the infection travels along the sheaths of the olfactory bundles. Of course one must keep in mind that these are not hard and fast rules. Not every infection passing the cribriform plate travels along the sheaths of the olfactory bundles; there are also cases with a circumscribed necrosis of the cribriform plate; and not every meningitis following an acute otitis develops by way of a thrombosis of the perforating blood vessels.

Case III. A man, 63 years old. On December 30, 1928, he noticed an earache and diminution of hearing on the right side. A paracentesis was performed. The otitis improved, while in that stage he acquired the grippe. The otitis flared up and produced daily temperatures of 104. He recovered from the grippe, but the fever did not disappear, and the secretion from the ear grew worse. On January 31, 1929, a simple mastoidectomy was performed. No bacteria were found in the cerebrospinal fluid. After the operation the fever did not subside. On February 9th, a pus-filled pneumatic cell in the petrosal angle was opened. The dura and the sinus were normal. No bacteria were in the cerebrospinal fluid. After the second operation a septic meningitis developed and the patient died on February 19th.

The microscopic examination of the temporal bones revealed a chronic adhesive process of the right middle-ear, and an abscess within the ganglion Gasseri, resulting from a petrositis (without clinical symptoms), and a primary thrombosis of the jugular bulb.

In this case the meningitis did not develop by way of the perforating blood vessels, but via a thrombosis of the jugular bulb, which latter was caused by an infection travelling along the blood vessels which perforate the floor of the middle-ear.

We meet quite different conditions in cases of single invasion of the meninges. In such cases most often chronic infection can be found within the middle-ear or the frontal sinus or the ethmoid. This chronic infection slowly destroys the tegmen tympani, or the posterior wall of the frontal sinus, or the roof of the ethmoid. If in this stage the case is operated upon and the dura widely exposed, recovery as a rule takes place. If no operation is performed, the infection penetrates into the depths, producing a pachymeningitis externa. In this stage also, recovery is possible with wide exposure of the pachymeningitis. If still no operation is performed, the infection penetrates through the dura, producing a circumscribed leptomeningitis. In this stage also, exposure of the pachymeningitis may lead to recovery, particularly if the patient is young, and the circumscribed meningitis is localized in the posterior fossa. In older persons and in circumscribed meningitis within the middle fossa the operation may be dangerous; changing the circumscribed leptomeningitis into a generalized stage, of course, may happen very rapidly. These cases, therefore, have to be operated upon in the stage of circumscribed meningitis, inasmuch as that stage lasts long enough to be recognized. The following cases may exemplify the described pathology.

Case IV. A boy, 19 years old. When he was six years old he acquired a bilateral otitis after measles. Despite treatment the acuity of hearing diminished on the left side. In September 1932, he caught cold and from then on the headache from which he suffered became worse and was localized in the left occiput. He complained of nausea, somnolence and inhibition of speech. No discharge from the left ear was noticed, but his hearing grew rapidly worse.

On January 4, 1933, a large perforation in the posterior superior quadrant of the left ear drum was found, with fetid discharge, and scales of cholesteatoma. There was an edema at the tip of the left mastoid and percussion over the left temporal squame elicited some dullness. He heard accentuated whispered voice on the left side at 15 cm. The Weber was not lateralized. The Schwabach was prolonged on the left side. The Rinne was negative, and high tones were markedly diminished. There was a nystagmus of first degree to both sides; more marked to the right than to the left.

The caloric test revealed a normally active labyrinth. The neurological examination revealed no pathological findings except a paresis of the facial nerve on the right side. There was no choked disc and the Wassermann was negative. In the cerebrospinal fluid Pandy's test was positive. The x-ray examination showed a sclerosed mastoid. The antrum on the right side was wide and on the left side narrow, hazy, without sharp margins. A lumbar encephalography was performed, without revealing any pathological changes. On operation (January 17th) an eburnated mastoid was found with a narrow, deeply situated antrum. Within the antrum and the attic greasy masses of cholesteatoma were found. The tegmen tympani was necrotic. The dura was widely exposed, being definitely reddened and bulging. During the following night the patient was restless and screamed. On the next day his temperature was 102.7, his pulse rate 150. He complained of severe occipital pains. There was a positive Kernig and Babinsky on the left side, and the leucocyte count was 20,200 with 72 per cent. polymorphonuclear cells, 25 per cent. juvenile forms, one per cent. lymphocytes and two per cent. monocytes. There was no choked disc. One hour later he was drowsy, all reflexes were increased, and there was definite rigidity of the neck. One hour later the patient was unconscious. In the cloudy cerebrospinal fluid hemolytic streptococci were found. A few hours later the patient died.

At autopsy a severe purulent pachymeningitis externa in the left middle fossa and a purulent leptomeningitis at the base and convexity of the brain were found.

Case V. A man, 41 years old who suffered from bilateral otitis since childhood. After catching cold, he felt pain in the right half of his face and his temperature rose to 104 with chills.

On January 10, 1930, fetid pus and a big polyp was found in the right external canal. There was also a right mastoiditis. Since the patient was very drowsy a cochlear test could not be performed. The labyrinth however, was normal.

There was a fully developed meningitis with 3,600 cells, but no bacteria in the cerebrospinal fluid.

At operation: cholesteatoma was found in the antrum and attic, a fistula 4 mm. in diameter in the tegmen, and a pachymeningitis externa. A few hours after the operation the patient died.

At autopsy a generalized meningitis was found. The microscopic examination of the temporal bones revealed on the right side an acute exacerbation of a chronic otitis with deep erosions of the promontory, erosion of the bony canal of the facial, and multiple perforations of the tegmen tympani leading into a large extradural abscess.

In the last two cases we had to deal with an acute exacerbation of a chronic otitis media with cholesteatoma which had broken through the tegmen tympani into the middle fossa. In both cases a wide pachymeningitis externa in the middle fossa followed the penetration of the suppuration through the tegmen tympani, and persisted for a certain period of time. In both cases recovery undoubtedly could have been attained by performing the operation in the early stage of the disease. Unfortunately in both cases the operation was performed when the circumscribed stage of the meningeal involvement changed or was about to change, into a generalized meningitis.

Other kinds of meningitis which often begin with a circumscribed stage of a certain duration are the meningitis following an inflammation of the frontal sinus or of the ethmoid, the meningitis following a labyrinthitis as Alexander pointed out, and occasionally the meningitis following a simple mastoid operation. However, it must be re-emphasized that all these statements are just clinical rules, not laws. Exceptions to these rules, therefore, are met from time to time. Such an exception might be described in the following case.

Case VI. A woman, 51 years old, who ten years before had an accident following which she noticed a gradual impairment of hearing and an occasional discharge from the right ear. On May 24, 1932, we found a perforation in the posterior superior and posterior inferior quadrant of the right drum. The malleus was present, and there was a small amount of discharge with a slightly fetid odor. She did not hear whispered voice and heard conversational voice ad concham. She was kept in the hospital for observation of her gallbladder. On June 7th, her temperature suddenly rose to 102.3, she had a profuse discharge from the right ear and pain in the right temple. There was a definite mastoiditis on the right side, but no meningeal symptoms, no vomiting and no chills. At operation pus was found in the mastoid process and in the antrum. The tegmen tympani was necrotic and the adjacent dura had a black color. After the operation the patient developed a meningitis and on June 8th the cerebrospinal fluid was cloudy and contained hemolytic streptococci. The dura was incised and a large subdural abscess was evacuated. The patient died on June 10th.

The miscroscopic examination of the temporal bones revealed a chronic otitis without cholesteatoma on the right side, and an otosclerosis on both sides. The suppuration had perforated the tegmen tympani through congenital dehiscences. Furthermore, we found on the floor of the middle fossa lateral to the eustachian tube hernias of the brain invading the bone of the floor of the middle fossa. These hernias became inflamed from the suppuration in the temporal bone and were probably the pathway for the fulminating leptomeningitis in this case.

Summarizing, we might say that it is impossible to speak about the prognosis and treatment of otitic and rhinogenic meningitis in general, since there are different kinds of otitic and rhinogenic meningitis which differ considerably in prognosis and treatment. We can distinguish between the cases of meningitis which have per se a better prognosis, and those which have from the onset a bad prognosis. To the first group of cases belong all kinds of meningitis which are ushered in by a stage of circumscribed meningeal involvement provided that they are operated on during that circumscribed stage. The otitic meningitis of this sort includes particularly the cases of cholesteatoma of the middle-ear, the so-called "mucosus otitis" (pneumococcus III) and the cases of labyrinthitis. As far as rhinogenic meningitis is concerned the meningitis originating in the lateral group of the paranasal sinuses (as Eagleton calls it) has to be mentioned, namely the cases of meningitis which begin in the frontal sinus or the ethmoid. In such cases everything depends on a timely operation. Age of the patient, virulence of the bacteria and administration of antiseptic drugs are of less importance.

On the other hand, the cases with multiple invasion of the meninges usually have a bad prognosis. In this group we find the cases of acute otitis, and those with infection of the olfactory bundles (mesial group according to Eagleton). Since in these cases a circumscribed stage practically does not exist, all depends on the age of the patient, the virulence of the bacteria and the degree of infection of the brain. The statistics show that within this group young persons have a better prognosis than older persons, and that sulfanilamide has considerably improved the prognosis.

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DISCUSSION

Dr. Joseph C. Beck, Chicago: I think it is a very good thing that you have limited the time on papers because I could go on talking about this man and this subject indefinitely. I think we are very fortunate in this country, particularly in Chicago, to have this learned man with us. There is not time to enter into a full discussion of any part of meningitis. He called attention to a number of cases that have been mentioned as cured long ago. I might recall one such case in this town—a butcher boy on whom I operated secondarily to a mastoid. I did a labyrinth operation and there was performed spinal drainage of the pyogenic fluid for several days. That boy was shown here several years later as cured. These were rare cases then. Dr. Brunner brought us a large number of cases that have recovered from the use of sulphanilimide and yet he gives us warning not to be too enthusiastic, forgetting the pathology which was so beautifully shown in his slides. The study of the pathologic details is most important. I am sure I voice the sentiments of everyone when I say this was a rare treat and well worth coming to hear.

IMMUNIZATIONS

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Immunization: the act of rendering immune. We deal with three classes of immunity. We have an active immunity conveyed by recovery from an infectious disease or introduction of a vaccine; natural, which is one peculiar to a species; passive, that conveyed by the introduction of antitoxins; or that obtained from the mother at birth. I shall endeavor in this paper to discuss briefly in the allotted time some of the antitoxins or vaccines that have to do with immunity, namely: typhoid fever, diphtheria, whooping cough, scarlet fever and smallpox, with a report of some research work done and with emphasis of fifteen years of clinical experience.

TYPHOID FEVER

In typhoid fever in the past statistics will show that about one in 300 would be afflicted with this disease. However, I feel that safe milk, safe water supply and safe sewer disposal has probably had as much, if not more, to do with the control of typhoid fever than immunization. At best immunization is only a temporary measure. I find in searching the literature

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that experiments were begun with immunization in 1896. It was put on a voluntary basis in the Army in 1909 and made compulsory in 1911. The lack of success in early innoculations was probably due to the overheating of the bacilli. The method of choice of innoculation against typhoid fever is to give one-half cc. of typhoid vaccine which contains 500,000,000 typhoid bacilli. This is usually given at weekly intervals, the second dose of one cc. which contains one billion typhoid bacilli, and the third dose which also contains one billion bacilli. You usually get your immunity in about one week after the third dose. This immunity seems to last from two to four years. The Army repeats this vaccine at the end of three years. I have had experience in three major floods and we gave this vaccine at five-day intervals rather than weekly intervals. Typhoid vaccine seems to be effective if the doses are repeated as soon as the reaction is gone, and it can be given up to intervals of three weeks or even longer if necessary. It has been the practice of some health departments to give a series of typhoid innoculations, and the following year give one cc. which they thought would extend the immunity three years longer. The Army Medical School has made some recent investigations and they find that rather than give one cc. in the revaccination that one-tenth cc. of typhoid vaccine is just as effective. They have given revaccinations up to as long as ten years since the first vaccination and in some instances it is effective. They don't know how long this revaccination is effective as the experiments have only been done recently. However, it looks as if by giving the complete series of typhoid immunization, and at the end of three years on the revaccination the one-tenth cc., it is just as effective and the reactions are almost nil. We find that where an individual has been given previous innoculations that the revaccination seems to cause the reactions to be greater. I personally haven't had occasion to test out this one-tenth cc. in revaccinations. This was presented by Lt. Col. G. C. Dunham before the Laboratory Section of the American Public Health Association in Kansas City, Missouri, October 26, 1938.

DIPHTHERIA

In diphtheria we have therapeutic and prophylactic antitoxin, toxin-antitoxin, diphtheria toxoid, alum precipitate toxoid and Schick test. It is so easy for the laity to get mixed up on this immunity. They are under the impression that having diphtheria renders one immune. My experience has been that about 50 per cent. of individuals having had diphtheria are rendered immune, and of the remaining 50 per cent. I find that a good percentage of those are more susceptible to subsequent attacks than others. I find that prophylactic diphtheria antitoxin would not in some cases render the contacts immune for the duration of the disease. With toxin antitoxin given in one cc. doses at weekly intervals for three doses, it would render about 75 per cent. immune from diphtheria. Godfrey has shown that by the innoculation of 50 per cent of school children and 33⅓ per cent. pre-school children we could control diphtheria from a public health standpoint, but we would have sporadic cases. The disadvantage of toxin-antitoxin is the serum sickness that one may get from subsequent horse serums. I have given a vast amount of toxin antitoxin, both the horse and the goat serum, and find that the goat serum is more prone to local reactions. I also found that the horse serum toxin antitoxin we have given subcutaneously was just as effective as a Schick test or Schick solution. If the individual were immune one would get no local reaction, but if the individual were susceptible to diphtheria one would get a local reaction not unlike a positive Schick test. In diphtheria toxoid in the older children the reactions in some instances are rather severe. The immunity from two-dose toxoid, of which we gave one cc. doses at intervals of three to four weeks, was found about the same as toxin antitoxin. With alum precipitate the advantages are that your immunities are quicker and higher than other methods. I find you will get an immunity from alum precipitate in three weeks after the first dose in approximately 70 per cent. of the cases. After three months your immunity will run over 90 per cent. and in 15 to 20 per cent. of these cases your immunity will wear out after two years. In giving two-dose alum precipitate at intervals of three weeks I find you get an immunity in over 90 per cent. of the cases which seems to be lasting. I have noticed very little reaction from alum precipitate in children under ten years of age. I always shake the solution thoroughly before giving the innoculation. I think the method of

choice for immunization against diphtheria is two doses of alum precipitate toxoid. The Schick test that is given intradermally, I usually give six months after the toxoid and repeat it in two years. I do not use a control and I read the Schicks in a week. If it is positive you usually get some desquamation and discoloration.

WHOOPING COUGH

The literature on immunization against whooping cough seems to be confusing. Some authorities recommend the vaccine both as a preventative and as a therapeutic measure, and others say the vaccine is no good. I have used the stock vaccine in a good many cases and have received fairly good results. Some time ago at an Orphan's Home in West Virginia that had some forty children, I couldn't get a history of any child that had attacks of whooping cough. A child was admitted with whooping cough and I immediately began immunizing the forty children. We only had two out of the forty develop whooping cough and those cases were very light. During my service with the Michigan State Health Department I had occasion to watch the result of some research work done by Kendrick and Eldering at Grand Rapids. They had under observation 4,212 children of which they injected 1,815 and used 2,397 as a control group. The person-years of both groups was 4,575. The person-years of those injected was 2,268, and of the control group was 2,307. The number of attacks in both groups was 400. The number of attacks in the injected group was 52. The number of attacks in the control group was 348. The whooping cough incidence based on person-years was 8.7 in both groups, and in the injected group was 2.3 and the control group 15.1. The difference in the injected group of 2.3 and the non-injected group of 15.1 is 12.8. The severity rating of both groups: number of attacks 400, very light 35, light 95, moderate 218, severe 41. The percentage of both groups: very light 8.8, the light 23.8, the moderate 54.5, severe 11.5 and rating unknown 1.2. In the injected group of the 52 cases: very light 21, light 17, moderate 12, severe 2. The percentage very light would be 40, and the light 32.7, moderate 23.1, severe 3.8. The control group of the 348 cases: 14 very light, 78 light, 206 moderate and 35 severe, rating unknown 5. The control group percentage is very light 4, light 22.4, moderate 59.2, severe 12.9 and rating unknown 1.4. The very light non-whooping abortive attacks constituted 40 per cent. in the injected group compared with four per cent. in the control group. The types of exposure, all known of the injected group, was 297, attacks 38, per cent. 12.8. In the control group there were 273 with 187 attacks with a percentage of 68.5. The percentage of attacks in the control group is much higher than the injected group with 12.8. In the control group there were 273 with 187 attacks with a percentage of 68.5. The percentage of attacks in the control group is much higher than the injected group with 12.8 per cent. in the injected group compared with 68.6 in the control group. Dr. Kendrick informs me that it seems logical to suppose that immunity is progressive and starts with the first injection of vaccine. The question of the duration of immunity is not settled and she informs me that if immunity will last long enough to protect during the first few years of life that they will feel gratified. The whooping cough vaccine prepared by the method of Kendrick and Eldering contains hemophilus pertussis ten million per cc. The dosage is given at weekly intervals, first dose 1 cc., the second and third dose 1½ cc., and the last dose is given in two 1½ cc. injections, one in each arm. The treatment is given in four or five injections from one-fourth to two cc. every two to five days.

SCARLET FEVER

I think that quite a lot of very encouraging research work has been done on immunizations for scarlet fever. Some authorities, however, claim that the vaccine will only prevent the rash. As a public health worker I have been weighing very carefully the fact that in instances of immunization reactions are rather severe, and in a vast majority of the cases of the disease the symptoms are very light. The percentages of mortality have been a great deal less than one per cent. and I have had occasion to observe a good many thousand cases. I am equally convinced that the vaccine as prepared by the Drs. Dick has a lot of virtue. I have had occasion to observe the therapeutic antitoxin and have noticed that the results of this are good if given early, especially in the first four days. With the Dick test I have found that it has been a wonderful help to me in controlling the disease, both as a diagnostic agent and for testing the immunity for scarlet fever.

I have never found a case of scarlet fever in one that had a negative Dick test and have never seen a desquamation in a case that showed a negative Dick. When given as a diagnostic agent I read the Dick test in twenty-four hours. I have found that a case of scarlet fever will give a negative Dick test at the end of six days.

SMALLPOX

The one word in the control of smallpox is "vaccination." We are all familiar with the method of manufacturing smallpox points. I have always used calf virus and have had no experience with chick embryo. The method of vaccination that I like is to prepare the arm with ether. It dries quickly and my percentages of takes have been very high. I like ether much better than acetone. I use the pressure method. As stated, first prepare the arm with ether and introduce the vaccine preferably on the arm, and with the needle sideways gently press through the vaccine eight or ten times and wipe the vaccine off. With this method the percentage of severe reactions is lessened materially and there is less danger of infections. It makes small scars. We caution the patient to be very careful not to break the vesicle and not to use any shields or dressing of any kind. Should the vesicle become broken and the arm develop a secondary infection it should be treated as any other infection. I am firmly convinced that vaccination lasts much longer than the three to five years that the laity believes. I want to insist that all children be vaccinated during their first year and then again in about twenty years. I find with a good scar that I have received very, very few secondary takes. If the immunity is still good on revaccination, usually within twenty-four hours I notice a small red spot that itches some for a day or two and fades away. In controlling smallpox we should see that at least 90 per cent. of first grade pupils are vaccinated. I have noticed more smallpox since I have been in Illinois than I have seen in the last fifteen years. I think that is due to the let-down in vaccinations.

DISCUSSION

Dr. H. A. Orvis, Winnetka: Typhoid fever, I believe, is prevented to a greater extent by making water supplies safe than by all other procedures combined.

The boosting method of maintaining a high level of immunity is worth study and further experiment. It may be that many immunities which are induced by doses of killed bacteria could be better maintained by a short interval single dose than by full three-dose treatment at longer intervals.

The question of antigenicity is very important, as some strains of organisms will not produce immunity at any dosage. Now that it is known how to distinguish antigenic cultures, many failures that marked past experiences can be eliminated.

Under diphtheria I have not felt that reaction to horse serum T.A.T. was due to the toxin as often as to the protein of the horse serum.

Personally I have observed very few reactions to alum precipitated toxoid.

As to whooping cough; it is characterized by a wide variation in manifestation and severity. Many negative and uncertain results of attempted immunization in the past have been due apparently to non-antigenic strains of hemophylis pertussis. Sauer, as well as Eldering and Kendrick, emphasize the need for very careful growing and selection of the organisms for preparing vaccine, to be sure they will produce antibodies.

We have some interesting figures in regard to Sauer's work, not only in cases that occurred in my territory but also in Evanston. The summary of these cases follows rather closely Eldering and Kendrick's work referred to by Dr. Farrier.

Since 1933 Sauer in his private practice has vaccinated 1,001 babies and he contrasts these with 560 cases which were not vaccinated. If we compare them by the rate per 1,000 of incidence, the rate for the unvaccinated was 196 and for the vaccinated was 16. The next group is interesting because it is a public health clinic series. The Evanston Health Department has been vaccinating their infant welfare babies since 1934 at the average age of nine months. They have vaccinated 1,377 babies, and against this number they contrast 1,100 during the same period that have not been vaccinated. The rate among the unvaccinated for contracting whooping cough is 117 while the rate among the vaccinated is seven. The combination of these groups with other small groups under observation show a total number unvaccinated of 1,730 and vaccinated of 2,453; the rate of incidence among the unvaccinated is 165 and for the vaccinated is 13 per 1,000. There is consistence in these figures. They seem to indicate slightly better than 90 per cent. immunity. It is a large volume of children over several years of experience. It combines private practice with public health clinic material where ideal home environment may not be present. If time substantiates this immunity of 90 per cent. it is an acceptable accomplishment; as good as we can get in vaccination for other diseases. (Journal A.M.A. Jan. 28, 1939).

Scarlet fever bothers me greatly as to diagnosis. We are now having an incidence of streptococcic infection, a few cases of which are called scarlet fever and others streptococcic sore throat. I suspect they are identical as to the causative agent.

Under the recent studies such as those of Zinsser, Enders and Fothergill we can come to some new conclusions relative to streptococcic infections.

Scarlet fever may be caused by several types of hemolytic streptococci.

There are several antigenic properties to each type of these streps. We have been trying to associate the disease with the erythrogenic or rash producing factor alone and disregarding some of the other antibody producing factors, such as the pyogenic factor. The antigenic properties of different types of streptococci vary quite markedly, so that one type may have a marked erythrogenic factor producing a definite rash while another produces a mild or even no rash, yet have other antigenic properties that developed highly toxic cases.

Immunization of nurses, interns and children in institutions has shown a marked reduction of incidence among the immunized. Scarlet fever immunization evidently has a place, but its application to private practice depends upon factors to be decided by the physician.

As far as smallpox goes I can say nothing except that the high incedence of smallpox in Illinois is due to the gross negligence of private practitioners and health workers in their duties toward society.

Dr. Loran E. Orr, Springfield: I would like to ask Dr. Farrier the time interval between primary vaccination and revaccination, whether I got it straight or not. I think you said you revaccinated at the end of twenty years. Is that right?

Dr. R. C. Farrier: No. I meant to say the laity are under the impression they should be revaccinated every three to five years. I have been watching that, Dr. Orr, and wondering how long you would say. I do not know how many cases of smallpox you have in the State, but we have some 30 cases around East St. Louis now. About the time we have got it all cleared up, somebody will drop in from St. Louis or elsewhere with small pox, or someone will move into a home quarantined on account of smallpox. We have been chasing them down there for about six weeks, and we have had our first case in a white family. I have had occasion to see in the last week two cases that had been previously vaccinated. One gave a history of being vaccinated twenty years ago and another of being vaccinated thirty years ago. I usually vaccinate everyone that comes up, even if he has been vaccinated two or three years ago or five years ago. And, if he is still immune, I usually get a reaction there that I consider an immune reaction. I was vaccinated when I was in high school, and about two weeks ago I had an immune reaction. I heard a medical officer from the Navy, two or three years ago, say he would recommend revaccination at least every seven years. I recommend that they be vaccinated at least twice in their life and again every time the occasion arises. That is all I can add to it. I hope that answers your question.

Dr. Orr: I probably misunderstood you. Of course, in this state we recommend they be vaccinated every five years.

Dr. Farrier: I recommend it every time there is smallpox in the community.

Dr. A. J. Levy: In regard to diphtheria immunization, I have had very favorable results with the alum precipitated toxoid in immunizing adults. I would like to know if Dr. Farrier has had similar experience with the alum. Instead of starting with 1 cc., I begin with 0.3, then 0.7 and then finally 1 cc. This method has given very good results with very few reactions. It seems to me that the alum precipitated toxoid gives a higher degree of immunity than the toxin-antitoxin. This year I have seen a good many adults coming down with diphtheria. I have also seen children who were immunized with 1 cc. of alum precipitated toxoid about four years ago, though no Schick test was done on them at that time. Nevertheless a large number developed diphtheria. This would demonstrate that one injection was not sufficient to protect the children for a long period of time.

As far as smallpox is concerned, it seems to me that we are not certain whether it is sufficient to vaccinate an individual and then assure him that he is immune for seven years, should the vaccination take. We don't do this in cases of diphtheria immunization,—give three injections and then tell the person he is immune for a certain number of years—without Schicking him. Don't you think, Dr. Farrier, it would be well to practice immunity reaction in all cases before we determine whether or not the individual is immune to smallpox? Then once an immunity reaction is observed we will feel that we have not just trusted to luck.

Dr. Farrier, in closing: I revaccinate everyone every time I can, Dr. Levy. Good!! I make a practice of vaccinating school children again about the first year after the first good take. This seems advisable in order to determine whether the child is immune to smallpox, and the immunity reaction will serve as an indication, just as the Schick test or the Dick test. The only advantage in vaccination over the Schick and Dick tests is that vaccination boosts the immunity in the individual in case he is not adequately immune, an advantage of great value.

CHOREA GRAVIDARUM. REPORT OF A CASE RECURRING IN THREE SUCCESSIVE PREGNANCIES. KLIPPEL-FEIL SYNDROME IN THE LAST NEWBORN

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CHICAGO

In 1932 Willson and Preece[1] gave a very comprehensive summary of 797 cases of chorea gravidarum collected from the literature and from questionnaires. Among these cases were 99 (over 12%) of chorea recurring in subsequent pregnancies. Sixty-nine recurred during two pregnancies, eighteen during three, seven during four, four during five, and one during 13 pregnancies. The average age of the women with chorea gravidarum was 22.4 years and 55.5% were primiparae. The authors stressing the in-

fectious origin of the condition presented the following statistics: (1) 48.1% of 474 cases gave a history of chorea before pregnancy; (2) 35.5% of 404 cases gave a positive history of rheumatism; (3) 29.7% of 339 cases gave a history of both chorea and rheumatism; (4) 32.4% of 358 cases showed definite signs of heart disease; (5) 86.9% of the 46 cases which came to autopsy had cardiac lesions; (6) chorea minor during childhood appeared to lessen the severity of the chorea during pregnancy.

While most of those who have reported cases of chorea gravidarum regard the condition as a Sydenham's chorea occurring in pregnancy (in graviditate, not gravidarum), others[2] consider toxemia to be the essential etiological factor. A few cases have been reported[3] in which hysteria and a few others in which an endocrine disorder seemed to be the underlying causes. The same disagreement among authors exists in seeking the causative factor of chorea minor. Those who have seen severe choreas in pregnancy complicated by fever and toxic psychosis are convinced of the infectious origin of the disease. In these, usually fatal cases, an endocarditis and encephalitis are usually found postmortem. On the other hand, the mild cases, in which choreiform movements occur during the first months of pregnancy, usually accompanied by emotional instability, and without temperature, resemble other toxemias of pregnancy. In the latter cases the choreiform movements are apt to clear up or improve under rest and care with or without sedatives. Sometimes a psychic factor is suspected just as in emesis gravidarum. Yet, even these mild choreas frequently give a history of chorea or rheumatic fever in childhood, or show signs of a mitral valve lesion which usually results from acute rheumatic fever. In addition it has been observed that this childhood chorea or rheumatic fever confers a relative immunity against a severe chorea gravidarum. The fact that in some cases a few intravenous injections of serum[4] resulted in complete recovery before labor is not conclusive evidence of an underlying toxemia of pregnancy, because injections of neosalvarsan have sometimes been given with equally good results. Nevertheless, pregnancy must be an important influence in chorea, else why its reoccurrence in subsequent pregnancies and why the rapid disappearance of choreiform movements post partum in most of the cases? Why then not summarize these opinions of etiology as follows? Given a rheumatic fever and choreic diathesis in individuals of the asthenic, anemic and underweight type, complicated by the toxemia of pregnancy, or by emotional disturbances such as fear and worry, and the result is chorea gravidarum.

The occurrence of chorea gravidarum is rarer than most of the other toxemias of pregnancy. Many prominent obstetricians have never seen a case. According to Willson and Preece's tabulations only 179 cases of chorea gravidarum were reported in 270,825 pregnancies, one case in 2,275. From Guy's Hospital, London, French and Hicks report[5] only 29 cases in thirty years' practice.

The symptoms vary from a slight coarse twitching of a single extremity to violent choreiform movements of the whole body so that restraint is required. More than fifty per cent. of the cases are of the mild type. In most cases incoördinated movements of the hands prevent the patient from self-feeding and from holding objects. The gait is clumsy and there may be movement of the leg muscles even on standing and during rest. Frequently the facial and tongue muscles are affected. Hence the facial grimaces and peculiar grunting and clucking sounds which are heard. Contortions of various parts of the body, hypermotility and incoördination are characteristic. Sometimes the choreic movements are limited to one side, hence a hemichorea. In the severe cases the body is never at rest, not even during sleep, and mental symptoms, delirium or toxic psychosis, are often complications. The danger to life is often due to inanition, for swallowing of food is sometimes impossible. When fever is present a bacterial endocarditis or encephalitis is usually found postmortem. In such cases albuminuria and leucocytosis are generally present. Otherwise the laboratory findings are negative.

The prognosis depends on the severity of the symptoms. When fever and psychosis are complications the mortality rate is very high. Of 26 choreic pregnancies complicated by fever 23 died, a mortality rate of 88.4%.[6] Artificial termination of the pregnancy is generally thought to increase the mortality rate. Quoting Willson and Preece, of 171 cases terminated artificially the mortality rate was 33.3%; of all those who delivered spontaneously at term (473 cases) the

death rate was 13.1%. As for the milder cases of chorea delivered spontaneously at term (312 cases) the mortality rate was only 1.9%.

Usually the choreiform movements and hypermotility become worse during labor, but recovery postpartum in most cases is very rapid. Of 543 cases of Willson's series of cases that came to term spontaneously 30 per cent. (161) recovered from the chorea before term; 44 per cent. (240) recovered from one to five days after delivery; while in 26% (142 cases) the chorea continued postpartum, and of the latter 24 had not recovered one year postpartum.

The fetal mortality rate is of course much higher than that of the mother. In Willson's series the fetal mortality rate was 50.9%, prematurity being the predominating cause. Only two infants were born with choreiform movements, the latter promptly disappearing after a few days. Abnormality of the fetus is rare. Two infants in their series had spina bifida and hydrocephalus. One newborn died of pemphigus. One other newborn had a hydrocephalus. Campbell[7] reports a case delivered by Caesarean section; the child had a facial asymmetry and a marked microphthalmus.

The pathologic manifestations of the fatal cases of chorea gravidarum generally confirm the inflammatory and infectious character of the disease. Reference has already been made to the cardiac findings of bacterial endocarditis and other valvular changes. However, the parenchymatous changes in the liver, spleen and kidneys resemble those seen in other toxemias of pregnancy. Brian and Gerundo[8] reported in detail their findings in a case of chorea gravidarum. Besides the parenchymatous degeneration of the liver tissue they found fat vacuoles in the hepatic cells. In the spleen there was a marked atrophy of the lymph follicles, and the kidneys showed a congestion of the glomerular capillaries and edema of the tubules. In the brain hemorrhages were found in the white matter of the cortex. The nerve cells were preserved throughout the brain except in the globus pallidus. Here there was a degeneration of the nerve cells and a proliferation of glia. Creutzfeld found lesions[9] in the corpus striatum with perivascular infiltration. There were both inflammatory and degenerative changes especially in the putamen. Urechia and Elekes[10] found congestion of the brain with many foci of embolic necrosis and pericapillary hemorrhages in the caudate nucleus. Micrococci were present in the vessels. The lesions were most severe in the corpus striatum, especially in the caudate nucleus, in the olives and in the body of Luys. Jakob[11] describes emboli and resulting necrosis especially in the putamen and in the caudate nucleus, as well as a hypertrophy and proliferation of the neuroglia. In Winkelman's case the vessel walls were thickened and there were changes in the corpus striatum, especially in the caudate nucleus. There was a severe degeneration of the smaller ganglion cells, a glia proliferation and perivascular edema of many vessels. Lymphocytic perivascular infiltration was rare except in the subthalamic region. Small hemorrhages were prevalent in the thalamus and subthalamus. In the caudate nucleus there was a small area of necrosis replaced by glia. Lehoczsky-Semmelweis[13] found perivascular infiltration in the corpus striatum, thalamus, substantia nigra and putamen. Nerve cell destruction and glia proliferation went on hand in hand. Hyperemic areas were evident in the basal ganglia and lymphocytes, plasma cells and macrophages in the substantia nigra. The putamen and globus pallidus were damaged most severely. While, therefore, the basal ganglia are conceded to be the site of the greatest damage, the etiological factor is not so readily conceded, for sometimes the lesions are degenerative in character, sometimes inflammatory. The same conditions have been found in Sydenham's chorea.

The treatment depends upon the individual case. In the mild cases bed rest, good wholesome food and routine hospital care are generally sufficient to allay the choreiform movements, if not to stop them. Sedatives may be needed if the above treatment is ineffective. Phenobarbital, chloral hydrate and bromides are to be preferred to morphine. Arsenicals such as sodium cacodylate have been used, but its efficacy is more doubtful than in chorea minor. Intravenous injections of serum from normal pregnant women have been reported as successful, and should be used in the more severe cases. The value of magnesium sulphate injections has not been proved. Most important in the matter of treatment is to determine if and when to induce artificial termination of the pregnancy. The high mortality rate in artificial termination should be weighed carefully. In the very severe

cases complicated by fever, the same contraindication to operative procedure holds as in the acute infections during pregnancy. In the severe cases of chorea gravidarum artificial termination of the pregnancy usually results fatally. Of the operative intervention early abortion is preferable to Caesarean section; and the earlier the abortion the better the prognosis.

REPORT OF CASE

First admission—Mrs. F. W. first came under observation in the clinic of the Women's and Children's Hospital on Sept. 7, 1934. She was nineteen years of age, married, asthenic in type and underweight, a primipara about six months pregnant. She was referred to neurology because of choreiform movements of the left arm and leg of two months' duration. The arm was painful, preventing sleep. Besides the coarse, infrequent, involuntary movements of the left limb she did things clumsily. She was awkward and things dropped from her hands. She remembered having diphtheria in childhood and frequent sore throat. Tonsillectomy was performed at the age of thirteen. Both parents were dead. One sister, always sickly and paralyzed, died at 27 years of age. Neurological findings,—except for the hemichorea, were essentially negative. Muscle strength was good and she approximated the fingers well. The patellars were hyperactive and the abdominals on the right were not elicited. A double mitral lesion was present. The blood pressure was 120/80. The laboratory findings were negative. Phenobarbital gr. ss b. i. d. was given. The condition, never alarming, improved and she was delivered of a male child Nov. 24, 1934. During the delivery the choreiform movements became generalized including the face and were very marked. The next day, there was a suggestion of a left facial palsy, she was unable to approximate the thumb to the fifth finger and adiadokocinesis was present on the left. The chorea was quite marked especially on the right side and the right leg was somewhat rigid. Improvement set in after a few days and continued. When seen two months later the hands were fairly steady and the numbness was disappearing. She refused to be sterilized.

The newborn had generalized twitchings which lasted two days.

Second admission—Dec. 2, 1935, pregnant six weeks. No choreiform movements present. They reoccurred, however, during the fourth month. The same coarse, involuntary movements of the left hand, with athetosis of the fingers appeared. The left leg was very slightly affected. The chorea was less marked than during the first pregnancy. The heart showed the same double mitral lesion with slight right-sided enlargement. The pulse was 80. The blood pressure 114/80. The fingers were cyanosed. The urine showed one plus albumen. Medication did not seem indicated. She was delivered of a normal female child July 9, 1936. During labor the chorea became more marked. Showers of petechiae appeared over the neck and face during the second stage. She had difficulty in talking. Low forceps were used. The chorea subsided rapidly post partum. Two months later she complained of numbness in the right arm, but the choreiform movements had almost disappeared.

On Sept. 3, 1937, the patient came to the clinic complaining of a numbness of the fingers of the right hand, radiating up the arm. It began about one month previously, about the time that her second child, sick with otitis media and meningitis, had died. The patient was very much upset emotionally. When advised to be sterilized, she wept and declared she wanted more children.

The present admission—When seen Sept. 2, 1938, she was pregnant four months, para III. She had lost about ten pounds in weight and looked very ill. Choreiform movements had started again one month previously. They were bilateral and much more severe than before. Incoördination of movements was evident in all four extremities; the left hand, however, again was most severely affected. Manipulation was very clumsy and she had difficulty bringing things up to her mouth, so that self-feeding was almost impossible. She made grunting sounds constantly, and grimaces of the facial muscles were marked. The lips twitched. The gait was wabbly and the leg muscles were in constant motion even when patient was standing still. The tongue was thick and in constant motion causing those grunting or "clucking" sounds.

Physical examination—The double mitral murmurs were again heard, but the heart was compensated. There was a suggestion of club fingers. The temperature, pulse and respiration were normal. The blood pressure deviated from 120 to 130 systolic, and from 80 to 92 diastolic. The neurological findings: incoördinated, coarse, irregular movements of all four extremities and of the facial and tongue muscles. The chorea was most marked in the fingers which were athetotic. No other tremors were present. The muscle strength was good. The cranial nerves were otherwise intact. The fundi were normal, and the pupils reacted to light and to convergence. The corneal, pharyngeal and abdominal reflexes were present and equal. The Chvostek and Trousseau signs were negative. The triceps, biceps, supinators, patellars and achilles reflexes were hyperactive but equal. Adiadokocinesis of both hands, worse in the right hand, was present. The Babinski and Hoffman signs were negative. There was no ankle clonus. Sensations were intact.

Course and treatment—Small doses of phenobarital and weekly intravenous injections of sodium cacodylate (gr. xv) were ineffective. However, patient was uncoöperative. She was very much disturbed mentally accusing her husband of abusing her, and she ranted a great deal about her domestic unhappiness. Her complaints, seemingly more or less childish, were aired openly in the clinic before the patients. It then seemed desirable to ascertain her I. Q. The Stanford-Binet rating was ten years, seven months, classifying her in the group of high grade mental defectives. Her childlike reactions now became explainable, why she did

not follow out orders, why she refused hospitalization, and why she opposed sterilization.

She entered the hospital Oct. 28, 1938 and was very much improved after several weeks. She insisted upon leaving after one month's stay; but as she was losing weight and the choreiform movements became worse she was readmitted in December when she refused to stay more than one week. In the hospital she was given calcium gluconate, brewer's yeast and cod liver oil, besides bromides, and later small doses of phenobarbital as sedatives. The temperature, pulse and respirations were normal except during a few days when she had a severe conjunctivitis of the left eye. The temperature rose only once to 100°, and the pulse to 104.

The laboratory findings—Hemoglobin 80%; R.B.C. 4,450,000; R.B.C. 10,400; differential cell count, polymorphs. 72%; small lymphocytes 26%; large mononuclears 2%. The sedimentation test 11/3/38 was 25 mm/1 hour; on 11/13/38 was 16 mm. The basal metabolic rate was once +91 and again +100.9 (there was a great deal of muscular twitching about the mouth which may account for these readings). The blood sugar was 121 mg., the calcium 10 mg., the N.P.N. 30 mg., P. 3-5 mg., urea N. 15.7 mg.; the CO_2 62%; the bromsulphothalein liver test negative. During the second stay in the hospital five injections of magnesium sulphate were given intramuscularly twice daily. The patient objected to these injections. Since excitement of any kind caused an exacerbation of the chorea the injections were discontinued.

During labor on Jan. 29, 1939 the choreiform movements became more severe and more frequent involving the shoulder and face. A few days post partum the "clucking" and facial twitchings had abated, but the choreiform movements of the hands continued. Two months later these movements were still detectable in the left hand and left leg and occasionally in the face.

The Newborn—The absence of a neck, a low hair line and limitation of movement of the head were noted at her birth. An x-ray of the spine showed the normal number of cervical and dorsal vertebrae, but the seventh cervical and the first dorsal were crowded together. The first and second ribs were absent on the right, an irregular bone-like enlargement in the region of the first rib protruding as a rudiment. The first and second ribs on the left appeared fused near the axillary line. The condition is known as the Klippel-Feil syndrome, except that in the latter some of the cervical vertebrae have been found lacking or fused together.

SUMMARY OF CASE

An asthenic, underweight, mentally retarded female inclined to become hysterical on the least provocation, had a hemichorea during her first pregnancy, at the age of nineteen years. There was no history of a previous chorea or rheumatic fever, yet the patient had a double mitral lesion. During the second pregnancy the chorea, of a rather mild type, recurred. During the third pregnancy, the chorea was generalized and of a moderately severe type. She was unable to feed herself and to use either hand, and the facial movements and the "clucking" sounds were quite marked. These symptoms became worse on any excitement. Bed rest and freedom from emotional disturbance caused the choreiform movements to subside, so that the patient could care for herself most of the time. In all three pregnancies the chorea began in the third and fourth months, lasted all during the pregnancy, eased up immediately after the delivery, although incoördinated movements could still be detected several months post partum. The last newborn showed the Klippel-Feil syndrome.

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THE DOCTOR LOOKS AT HOSPITALIZATION INSURANCE

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There have, of course, for many, many years been available two types of insurance policies which have agreed to reimburse the patient for the cost of his medical and surgical fees. I refer to Workmen's Compensation insurance on the one hand and personal accident policies on the other. These two policies, however, apply only to accidental injuries and sometimes certain occupational diseases and do not ordinarily come into play when hospitalization or doctor

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bills or nursing fees are required as a result of a sickness rather than an accident. Then, too, there has in the past always been available various types of accident and health policies which have agreed to pay a weekly benefit to the insured in case he was disabled through accident or sickness, and some of these policies have contained supplementary clauses in which the insurance company agreed to increase somewhat the weekly benefits if the policyholder was confined to a hospital or required nursing services as a result of his accident or sickness.

However, none of these old style policies specifically set up any way of reimbursing the policyholder for his doctor bills as such, except where the doctor's services were necessitated by accident. Furthermore, these accident and health policies were deficient in many other ways, such as, for instance, the fact that they were very expensive or else so limited in coverage as to be worth hardly anything.

About five years ago there was launched in Texas a hospitalization plan sponsored by a local group of hospitals. The hospitals guaranteed any person a maximum of three weeks' free hospitalization in any one year for a premium of around $9.00 to $10.00 per year. In many such plans only groups of persons, ordinarily employees of one concern, could be insured. Individuals, as such were barred for fear of selection against the hospitals, that is, the fear that all ailing persons would immediately subscribe to the plan whereas only a small percentage of healthy persons would subscribe, so that the hospitals would not secure a true cross-section of the real risk involved.

Shortly after the creation of these hospital-sponsored plans, the insurance companies (both life insurance companies and casualty insurance companies) sensing a new and popular demand for this type of thing, brought out competing policies in which they agreed to pay a policyholder $4.00 or $5.00 or $6.00 a day (an additional amount for laboratory fees, x-ray examinations, medicines, bandages, etc.) for every day he was confined to a hospital.

Under the combined impetus of the hospital-sponsored plan and the new hospitalization policies of the insurance companies, the new idea took on quickly and spread like wildfire. We in the insurance business were astounded at the spontaneous demand for this type of thing on the part of almost everybody we talked to. Suddenly everybody we met seemed to be obsessed with the idea that they might have to go to the hospital tomorrow and would not have the money to finance a stay in such an expensive hostelry.

Soon the insurance companies experienced a demand on the part of persons who had been hospitalized for some type of coverage to pay, in addition to the hospital bills, surgical fees incurred while confined in the hospital. The insurance companies found it inexpedient, however, to cover these fees by merely setting up a lump sum of indemnity which could be drawn on by the insured to pay such expenses. After consultation with medical authorities they adopted instead a surgical operation schedule which varied somewhat with different companies but which, on the whole, sets up fairly adequate amounts up to which the insurance company would pay for each operation.

There was some demand also for coverage for nursing fees and doctors' bills for hospital calls, office calls and house calls. Some hospitalization policies were extended to cover these items. Usually a maximum figure was set as a limit of the Insurance Company's liability per doctor's call, and another limit set on the number of calls that would be paid for as a result of any one accident or sickness. A maximum indemnity per day was fixed in the policy for nursing fees. Ordinarily a policyholder could buy his hospitalization policy in such a way that it covered only his hospitalization costs or he could add to it, if he wished, surgical fee benefits and in some cases he was permitted to cover also the fees for doctors' calls and the nursing fee benefit.

These hospitalization expense policies, as they are called, have therefore now developed so that they provide fairly complete coverage for all expense other than loss of time arising out of a disability whether caused by accident or sickness.

There is, however, considerable variation between policies depending on the organization that underwrites them, the cost of the contract, and the policy terms and conditions. There are in Chicago two hospital-sponsored organizations, incorporated not for profit, one called the Plan for Hospital Care, the other called Associated Hospital Service of Illinois, Inc. There are, in addition, scores of life insurance and

casualty insurance companies, some writing a standardized broad contract and some writing their own particular brand of policy. I will not try to analyze or compare for you all the types of contracts available. I will be satisfied to outline the three types of policies now most widely sold and with which you are therefore most likely to come in contact. These are:

1. The group hospitalization and surgical fee contract now standard with the large life insurance and casualty companies.

2. The contract of the Plan for Hospital Care, the larger of the two local hospital-sponsored plans.

3. The chief characteristics of the individually sold hospitalization policies and the commonest "jokers" in such policies.

In regard to the first of these (the standard Group Hospitalization Policy):

a. It is written almost exclusively by large, first-class companies.

b. It is written only for groups of 50 or more employees of one concern.

c. It is sold only on the payroll deduction basis, that is, the premiums are deducted by the employer from the paycheck of the employee.

d. Good health on the part of the insured persons is not necessary to secure the insurance, unless an employee fails to insure when he is eligible for insurance, but seventy-five per cent. of the employees must apply for the insurance. As a matter of fact, about ninety per cent. of the employees eligible usually take the insurance.

e. It pays $3.00, $4.00, $5.00 or $6.00 for each day of hospital confinement, the amount of benefit that may be purchased by each employee being determined by the employer. In addition, it pays for special hospital charges (such as anesthetics, x-rays, laboratory fees, etc.) up to a sum equal to five times the daily hospital benefit.

f. A policyholder must be confined in a hospital for at least eighteen hours to qualify for benefits.

g. The Insurance Company has *not* the right to cancel any insured person, although any insured person may cancel his own coverage any time he wishes.

h. All accidents and sickness disabilities are covered except those already covered by Workmen's Compensation or Occupational Disease insurance.

i. The policy usually pays for hospital confinements up to thirty days for any one continuous disability; for a slightly higher premium it may be made to pay up to seventy days.

j. Covers only hospitalization expense and surgical fees; covers no nursing fees or doctor's fees for office, house or hospital calls.

k. Persons seventy years of age or older are not eligible for this insurance.

l. Salaried representatives of the Insurance Company usually solicit each employee and explain the policy to him personally.

m. The employer frequently pays part of the premium as a gift to his employees, but not always.

n. Each group is written on an experience rating basis providing for reduction in rate if the claim experience is satisfactory.

o. The Insurance Company pays benefits direct to the policyholder, not to the hospital or doctor direct, thus preserving for the policyholder entire freedom in his choice of hospital and surgical care and preserving for the hospital and surgeon entire freedom in determining the fees to be charged.

In regard to the second general type of hospitalization policy (those sponsored by the hospital associations), we have selected the Plan for Hospital Care as typical.

a. It is operated by Hospital Service Corporation, an organization of good standing.

b. Insurance is sold only to groups of five or more.

c. Premiums must be paid by payroll deduction, except when this is impossible.

d. There is no age limit, although the Plan reserves the right to cancel the policy at any time by giving twenty days' notice.

e. Forty per cent. of the eligible group must apply for the insurance when there is a group of fifty or more persons; when there is a smaller group a higher percentage of enrollment is required.

f. This policy does not require eighteen consecutive hours hospital confinement to qualify for benefits.

g. The policy covers the following:

Twenty-one days of hospital care *in any one year*. This compares with 30 or 70 days for *any one illness* as covered by the Group Policy

just discussed; bed and board in semi-private rooms, two, three or four beds in a room; if a member wants a private room, the Plan will pay $4.50 a day toward its cost and, in addition, will pay for the other service listed here; general nursing service; unlimited use of the operating room; all anesthetics; all anesthesia services if administered by an employee of the hospital; all dressings; all medications except oxygen, antitoxins, vaccines, and other biological serums in treatment dosages, and except physical therapy; physical examinations (diagnostic services), including pathological and laboratory services, and x-ray examinations (plates or pictures, not treatments), if these services are performed by an employee of the hospital, when necessary to, incidental to, and concurrent with hospital care and treatment for illness or injury. These services are provided when requested of the hospital by the attending physician. In addition to the above bed care for illness or injury, the following services are provided to members when they do not need bed care—emergency hospital service to an accident victim, immediately following the accident, and hospital service to surgery patients at the time of the operation.

h. This type of policy does *not* cover the following which *are* covered by the group hospitalization policies of the insurance companies discussed above:

Quarantinable contagious disease, mental disorders, pulmonary tuberculosis, venereal diseases and conditions known to exist and to require hospital care when the insurance was taken out (tuberculosis and other contagious diseases account for about 10 per cent. of all hospital cases).

i. Like the Insurance Company's policy, this Plan policy will not pay benefits for accidents or diseases covered under Compensation or Occupational Disease Laws.

j. The Employer may pay part of the premium, but generally he does not.

k. There is no provision for a reduction in premium rate if the claim experience of the group is particularly good.

l. The Plan for hospital care does not solicit the group individually; its representative addresses a meeting of Department heads and explains the Plan to them, and they in turn explain the matter to the persons in their charge and distribute literature and application blanks.

m. This type of policy does not cover surgical fees, medical calls or nursing fees. The Group Hospitalization policy of the Insurance Companies does frequently cover surgeon's fees.

n. This hospital-sponsored type of policy always pays its benefits direct to the hospital, not to the policyholder. Further, the policyholder is required to use a "Plan" hospital, that is, one of the hospitals (listed in the policy) that has a contract with the Plan for Hospital Care, except in case of accident or emergency illness. The policyholder's freedom of choice and the hospital's freedom to determine its own charges are therefore, under this type of arrangement, somewhat curtailed.

The third general type of policy is the individually-issued hospitalization and expense policy. In regard to these:

a. The Insurance Company always requires the insured to sign an application which asks questions about physical history, medical care in the past and turn-downs for insurance.

b. The Insurance Company always reserves the right to demand a physical examination or refuse to issue the policy.

c. The Insurance Company always has the right to cancel on short notice.

d. The age limit is usually 60 or 65.

e. The maximum hospital confinement for which the policy will pay varies from 21 to 90 days.

f. The policy may cover just hospitalization expense or it may cover also surgical fees and/or medical calls and/or nursing fees.

g. The contract may have some or none of the following exclusions:

(a) Quarantinable contagious disease
(b) Infantile paralysis
(c) Mental disorders
(d) Tuberculosis
(e) Venereal disease
(f) Simple rest cure
(g) Diagnostic work which could be performed by the attending physician outside the hospital

h. These policies always provide a cash indemnity for the policyholder, they never pay the hospital direct.

i. These policies are written by all kinds of insurance companies—good, bad and indifferent.

Sometimes dependents, that is, in most cases, wives and children, may secure hospitalization policies at cheaper rates than the income-earning policyholder as a kind of supplement to his insurance. There is as yet no uniformity in regard to this, however, the rate for dependents in some cases being the same as for other persons. On all *group* hospitalization expense policies, however, the rate for dependents is less.

Pregnancy and its complications, such as miscarriage, are in most hospitalization policies considered a sickness for the purpose of claim and are covered, but sometimes for a shorter period of hospitalization than other disabilities. In most cases pregnancy is covered only after the policyholder has carried the policy for ten months or a year, but in the case of the Standard Group Policy of the large insurance companies, it is covered immediately.

Let us examine for a minute a typical surgical fee schedule in one of these hospitalization policies which covers surgeons' fees. It may be interesting to you to note the maximum fees for the various operations as scheduled in this list. It should be noted, however, that sometimes a concern will buy a group policy which will provide for only three-quarters or two-thirds or even one-half of the benefits as scheduled on the attached list. Where the benefits are so cut down, the cost, of course, is proportionately less to the policyholder or his employer.

Of course, the benefits in the attached Schedule of Operations are simply amounts of indemnity to the policyholder for surgeons' fees and have no necessary relationship to the amount of the actual fee which the surgeon may charge his patient. The Insurance Company must stipulate some maximum as a limit of liability. In many cases the actual fee may be substantially higher than the policy benefit, in a few cases it may be lower, but by and large, the average surgeon would, I imagine, be well pleased were he able to collect the amounts listed in cash and collect it *immediately* for every operation he performs.

In this connection I might make a suggestion. All policies providing payment for surgical fees and doctors' bills provides also that the insured may, if he wish, assign his benefits under the policy to the doctor. In cases where you feel that collection of your fee is doubtful, it might not be a poor idea to inquire incidentally as to whether your patient carries any such policy and if he does you might, if you wish, even go so far as to suggest that he assign to you his rights against the insurance company for the operation fee as scheduled therein "to save him, your patient, the trouble of filling out papers, collecting the check and endorsing it over to you."

I know I need not cite statistics to impress you men with the importance of this type of insurance protection for the average and below-average American. The point is that such insurance coverage is no less necessary for the doctor and hospital who treat this average and below-average American. The doctor, as you men know all too well, has been truly the forgotten man. He labors under a terrific handicap arising out of the fact that once he has performed his services, there is nothing he can do but try to collect his bill. He cannot replevin an article of merchandise. He cannot foreclose a mortgage. He cannot cancel an insurance policy which he has sold and thereby salvage some of the unpaid premium, like we in our business. If we will some day reach the point where hospital, surgical fee and medical fee insurance is as widely written as group life insurance (which is estimated to cover about seventy-five per cent. of the workers of the nation), we will have at least done as much for the doctor and the hospital as we have done for the undertaker who has, I suppose, been one of the chief beneficiaries of the widespread popularity of group life insurance. Today, between 3,500,000 and 4,000,000 persons in the United States carry Hospitalization Insurance, but the number is rapidly growing.

Approximately one person out of every fourteen in the United States is a hospital patient every year. Between a third and a half of these require surgical treatment.

There may be some question in your minds as to whether $3.00 or $4.00 or $5.00 per day hospital benefit is sufficient to provide decent hospital care. A recent survey shows that 28 per cent. of all beds in non-government hospitals are available at $3.00 or less per patient-day. Two bed rooms average $3.00 to $5.00 per day. Private rooms average $4.00 to $8.00 per day.

SCHOOL HEALTH IN ILLINOIS

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During the past few months, the committee on School Health and School Health Education of the Illinois section of the American Academy of Pediatrics has made an attempt to study the school health program in the state. Since direct interviews were impractical because of the expense and distance involved, it was decided that the questionnaire method should be used except in localities where committee members lived, and direct interviews could be held.

The decision to formulate and mail out a questionnaire was made after considerable hesitation. This method of getting information has been used and abused in widely separated fields during the past few years, and the first impulse on the part of the recipient of the questionnaire is usually to consign it to the waste basket. The committee was very agreeably surprised, therefore, at the response they received. The questions were based on suggestive material from the national committee reports as well as the local committee's concept of an ideal program.

The questionnaire was mailed to pediatricians and general practitioners scattered over the state. About ninety-five per cent. replied. A majority of the reports were from Chicago and the metropolitan area, but practically all of the cities of the state were included, as well as several smaller towns where a large part of the practice of the physician who replied is in rural districts. The schools reported were public, parochial, private, one university elementary, and one military academy.

The replies seem to indicate a prevalent interest in school health problems. Several physicians made additional comments and suggestions. It is planned to make a detailed statistical report on the replies later, classifying them according to size of community, type of school, problems presented, and strengths and weaknesses in the present program. However, several interesting observations can be made from a preliminary study of the material.

In general the situation is as follows: fifteen of the thirty-seven communities have doctors as members of the Board of Education. It is interesting that the predominance is in the medium-sized cities. Twenty have full time health officers, predominantly in the larger cities. Thirteen communities have school doctors, and of this number seven are pediatricians (three of these are in private schools). In general the appointments are made by the Board of Education, or jointly with the Board of Health, and receive their remuneration from these bodies. In the larger cities this is a monthly stipend, while in the smaller cities and towns, the physicians are paid by the call or by the hour, the hourly pay being not more than four or five dollars.

Only six communities do not have a school nurse. The ones who do, require a graduate nurse, with a majority showing that public health training is demanded in addition. Except in the larger communities the nurses were responsible for from two to five schools and were full time. Their duties range from morning inspection, to counseling parents, making follow-up visits, teaching health education, assisting in correcting physical defects, and in some instances testing vision and hearing.

Only two cities employ a full time psychiatrist, and one a part time. Nine have psychiatrists available to a limited degree in the community through state or private resources such as the State University, Northwestern University, and the Institute of Juvenile Research. Twenty school systems have a psychologist.

Nine communties require routine tuberculin tests of teachers and employees.

Eleven communities require entrance health examinations, some request annual examinations, others examine every three years, and some never. The time allotted for the examinations varied from four to thirty minutes per child. Time given to advising parents varied from no time to fifteen minutes. Arrangements for carrying out the doctor's recommendations are generally made through the school nurse to the parents or the family physician. Parents, in the great majority of instances, are encouraged to seek the advice of their private physicians. Inspection after illness is required only in a few instances, varying from a request for a doctor's certificate or nurse's inspection to no inquiry.

In most communities, schools urge immunization to diphtheria and smallpox by advice to the

We wish to thank Miss Martha Crumpton Hardy, Ph.D., of the Elizabeth McCormick Memorial Fund, Chicago, for statistical help.

parents; the majority of schools having information relative to this on file. One school reports doing Shick tests as part of the educational program.

Special opportunities for physically and mentally handicapped children were reported by twenty-five cities. These opportunities varied from sight-saving classes to special rooms or schools for the blind with specially trained teachers. In two cities transportation was provided for the crippled to another community which had a special school where treatment or reeducation could be prescribed.

In twenty schools, children needing corrective training received it under the direction of the physical education department. In one instance the program is under the direction of the school physician and consulting specialists in special classes or in the community hospital.

Only four communities do not report having health and safety education which in general is the responsibility of the teacher. In many instances she is assisted by the health department and the police safety division. In two localities, specially trained teachers carry on the health and safety education.

Twenty-two physicians report that their community conducts some type of organized summer round-up and twelve report none. Of those who do conduct it fourteen feel that it has value and eight feel that it has very little or no value.

Of the thirty-seven inquiries, sixteen reported having regular dental examinations, usually by a part time dentist; one of these reports dental care to the indigent through the fourth grade; a second reports annual corrective work by four dentists working part time, five or six hours a day.

Concerning a program for medical care for those unable to pay, outside the large cities where clinics are available there is practically no organized or community plan for caring for such children. In a few cases the township or the local relief agency pays for a minimum amount of the most needed care. Reports from three communities stated that they depend on the volunteer services of private physicians and dentists.

Nineteen physicians think their community is receiving some help from State and Federal funds for school health and school health education. Information concerning this point appears to be very indefinite. Practically all of such aid is for crippled children and for sight-saving work.

COMMENTS AND SUMMARY

It appears from an examination of the material that a majority of the medium-sized communities are recognizing the value of having a physician on the Board of Education. It is disappointing that the larger communities have not followed suit. As would be expected, a majority of the larger cities have full time health officers but only a small percentage of those are pediatricians.

The school nurse evidently has become acceptable to a majority of the communities. It would seem that in some cities her work is spread over too wide a territory.

One of the outstanding lacks indicated was in the field of mental hygiene. Since more knowledge is becoming available yearly on the effects of personality growth and development as related to childhood experiences, it seems unnecessarily wasteful to ignore and neglect resources available to aid in the amelioration of present or latent difficulties as found in the child population of the state. The study woulld seem to indicate a widespread neglect of diagnosis and treatment of early manifestations of behavior difficulties in the schools.

Only a few of the communities require routine tuberculin tests of the school personnel. It would be interesting to note whether more communities will adopt such a program as the importance of it becomes more acceptable. More education along these lines seems indicated.

Few communities approach the ideal of a yearly examination of all school children either by the private physician or school. In most instances, where examinations are held, the time allotted for them is too brief and there seems to be no uniform method of informing or advising with the parents about the findings.

Many of our cities, towns and rural districts are not very active along school health and school health education lines. We can probably apply this to a majority of the school communities in the state for our reports are from those communities where the physicians are interested in this work and are at least aware of what is and what is not being done. It must be remembered that our reports represent only urban and village districts with two or three exceptions.

At present it appears that only two groups of children are receiving anything approaching suitable care; those needing immunizations, and crippled children. This is commendable; however, there are many school districts in the state where there is no program for any kind of immunization procedures. Exclusive of the above two groups there are thousands of children entering school each year whose parents may think they are "healthy" but who do have remediable medical and dental conditions.

It would seem from the study that the larger communities are giving more opportunity to the handicapped child than the smaller communities and that there has been a serious lack of resources for them there.

The replies show that physicians have little supervision over the children needing corrective training, and that in a large majority of instances it is left entirely to the physical education department.

Less than one-half of the communities reported regular dental examinations.

It would appear that we are not utilizing to the fullest extent a plan which is beginning to be more widely recognized each year. We refer to the so-called "summer round-up." This is a procedure initiated by the national Parent-Teachers Association. An examination form is used with space for recommendations by the examining physician and dentist and a detachable portion which can be certified by the physician and dentist who do the corrective work advised. This examination should be made early in the summer preceding the child's entrance to school so that time is allowed for the private physician or clinic to do the corrective work necessary.

Since the activity and interest in school health work is in direct ratio to the amount of education and propaganda expended in that community, it might be well to recommend that each county medical society appoint a school health committee to cooperate with the school physician, the school nurse, the school board and the parent-teachers groups. The extensive education of the public by these groups should do much to arouse the laity to accepting the idea of improving the health of the school child. The advancement of this activity rests with the physicians, nurses and allied professional groups.

FALSE POSITIVE BLOOD SEROLOGICAL TESTS FOR SYPHILIS FOLLOWING VACCINATION FOR VARIOLA

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The recent widespread use of the presumptive serologic tests for the detection of syphilis in connection with statistical surveys has modified many conceptions as to the incidence of the disease. The surveys have also been useful in challenging our ideas as to the unimpeachabde validity of the positive test. Without discounting the value of thoese serologic tests, it is necessary to call attention to one possible source of error in the interpretation of the positive report. In these days of the glorification of sensationalism in popular medical education it is conceivable that much harm and not a little injustice may be done in the case of a false positive report, particularly when the interpretation is placed into the hands of factory superintendents and social service workers.

Restrictions on the interpretations of negative serologic reports have always been imposed with regard to the clinical findings. Such restrictions are rational also in the interpretation of the positive report, but by its very nature the presumptive test discounts the clinical findings. For that reason it is just as proper to instruct those of the laity who are concerned with serologic reports (and this includes the subject of the test) that a positive test does not necessarily mean syphilis.

Although the relative accuracy of the positive over the negative result in the presumptive test will never be called into question, the former is in noways infallible. The contrary opinion has been expressed, particularly in the earlier literature on the subject.

Kolmer[1] in the 1915 edition of his textbook, states: "Following the original communication of Wassermann and Detre, and especially after it was demonstrated that the antigen need not be biologically specific, the subject was extensively investigated by various observers, who reported securing positive reactions in many different diseases, results that we now know must have been due largely to technical errors. At

Case report from the Therapeutics Department of the Cook County Hospital.

PROTOCOL OF SEROLOGIC TESTS ON F. C.

Date	Complement Fixation Cholesteral..... Antigen..... Lipoid	Kahn	Laboratory
9/23/37	.....	neg.	Chicago Board of Healtb
4/ 9/38	neg.	+++	Michael Reese Hospital
4/15/38	.....	++++	Chicago Board of Health
4/21/38	.....	++++	State of Illinois
4/23/38	.....	+++	Cook County Hospital
5/ 3/38	.....	++++	Chicago Board of Health
5/12/38	++++ neg.	++++	Michael Reese Hospital
5/18/38	++ neg.	neg.	Michael Reese Hospital
6/ 1/38	neg. neg.	neg.	Michael Reese Hospital
6/ 6/38	neg. neg.	neg.	Michael Reese Hospital
7/ 3/38	.....	neg.	Chicago Board of Health
8/23/38	neg. neg.	neg.	Michael Reese Hospital
9/21/38	neg. neg.	neg.	Michael Reese Hospital

present it is known that positive Wassermann reactions may occur in a few diseases other than syphilis but not to the extent that earlier investigators would have us believe."

Kolmer cites reports of false positive reactions in leprosy, malaria, yaws (false?), relapsing fever, pellagra and scarletina. He makes no mention of false positive reaction following vaccination for smallpox. Such a case was reported by Dr. A. S. Giordiano at the 1938 meetings of the American Society of Clinical Pathologists. A similar case is reported herewith.

F. C., a student of 24, acted occasionally as a professional blood donor. He had had repeatedly negative Kahn and Wassermann tests, the last of which can be definitely set as on Sept. 9, 1937. On March 11, 1938, he was vaccinated for smallpox by the multiple prick method. A take was not immediately secured but toward the end of March, the site of the attempted vaccination erupted into what appeared to be a typical vaccination lesion. The latter persisted. On April 9, while taking the routine serologic examination required of professional donors, the Kahn test was found to be positive. This positive report was confirmed by those of other laboratories.

The possibility of a chancre occurring at the site of the vaccination was considered as well as the fact that the time of innoculation might have coincided with that of the vaccination and this possibility appeared more logical because of the latent period in the development of the lesion. Dr. David Omens of the dermatological department of the Cook County Hospital, who saw the patient on May 5, advised that a biopsy, which we had considered, be postponed, because he made mention of the fact that he had seen such cases before but could not remember them as having been reported. On his advice, the patient was watched and repeated serologic tests taken. His attitude proved justified by the subsequent developments, for a typical vaccination scab detached itself a week later.

Reports of serologic tests taken from June 1, 1938, have been consistently negative. The patient has remained well to the present time which is one year from the date of the only symptom which he presented: the apparent vaccination lesion. Although it is impossible to rule out, absolutely, the possibility of a syphilitic infection, the presumption is against this, and the conclusions are that the positive serological tests were due to changes in his blood serum induced by the vaccination for variola.

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OCCUPATIONAL DERMATOSES UNDER THE ILLINOIS' WORKMEN'S OCCUPATIONAL DISEASES ACT

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The occupational origin of certain diseases of the skin was recognized and recorded by medical authors 450 years ago, but little attention was devoted to this field until the last quarter century while in this country marked advances in the study and management of industrial skin diseases have been made chiefly during the last ten years. In Illinois the incidence of dermatoses occurring in industry may have increased in the last decades, at least proportionately with an increase of the industrial population and with the introduction of new industries, but any such increase has probably been offset considerably by reductions in disease incidence resulting from advances in manufacturing methods and by improved sanitation in factories and homes. The present active interest in this subject among Illinois physicians is therefore probably not attributable to an actual increased incidence of industrial disease. Many cases and types of occupationally acquired skin disease that were formerly only the personal concern of

*Red at the November 16th (1938) meeting Chicago Medical Society.

the patient and his physician have been brought before public scrutiny by the new occupational diseases act which has been in effect in this state since October, 1936. The skin diseases are the same but their legal status has been changed, and we should therefore devote first consideration to the law when discussing this subject, since the new law is in a large measure the stimulus for this meeting.

The type of compensation law now operative in Illinois, supplementing the older workmen's compensation act, is popularly referred to as *"blanket legislation."* In Wisconsin we have practiced subject to such legal provisions for many years and that is my apology for my temerity in coming to Chicago to discuss this subject with you. Wisconsin, the first state to adopt a workman's compensation act, began by compensating for occupational injuries in 1911 and gradually evolved over a period of years to a blanket form of legislation.

A study of Wisconsin Industrial Commission records shows that in 1934, following a period of actual decrease in industrial activities in the state, *three* times as many cases of disabling occupational disease were recorded as in 1920, with more than *six* times the expenditure for disability compensation and with *ten* times the expenture for medical aid. Actually no such increase in disease incidence occurred and this recorded increase was due to the liberalization of the compensation law.

The greater increase of disability payments over occupational disease incidence indicates probably an increase in the filing of claims subsequent to greater familiarity of both employers and employees with the requirements of the law and the opportunities afforded by it. The tenfold increase in expenditure for medical aid coincidental with a threefold increase in recorded occupational disease, may indicate that an increasing number of workmen are accepting medical aid available to them under the law instead of exercising their privilege of choosing their own doctors at their own expense. If these deductions are correct they may be of some significance in indicating possible future trends in other forms of socialistic medical practice, and these Wisconsin figures may indicate what may be anticipated in Illinois following a similar liberalization of your laws.

Although the Illinois law specifically states (Section 8) that "the employee may in any case elect to secure his own physician, surgeon and hospital services at his own expense," it is unlikely that the workman will exercise this privilege except in an unusual or occasional instance. This section of the act, defining compensation payable in cases of disability, states that "the employer shall provide the necessary first aid, medical and surgical services, and all necessary medical, surgical and hospital services thereafter, limited however to that which is reasonably required to effect a cure from the effects of the disease."

As usually happens when socialistic practices are adopted, manufacturing and other costs rise. If the payment of medical care for industrial disease does not come out of the individual workman's wages, it is charged up to operating costs, and, with compensation payments for disability, eventually comes out of the consumer's pockets. It is the responsibility of the physician handling occupational cases to keep in mind the broad aspects of this problem, and to observe the law as it applies to him by an intelligent and honest application of its rulings. To attach a tag of industrial origin to a case when in doubt may at the time simplify the management or disposal of that individual case and its fee, but is likely to create difficulties for the future. Conversely, to deny workmen services to which they may be entitled, by not carefully investigating doubtful cases, because of the pressure for economy exerted by employers or insurance carriers, will result only in discredit of the physician. The law should provide for payment of the doctor's fee for impartial investigation and diagnosis in all cases with a possible industrial relationship, and the better insurance carriers and responsible employers now accept such obligation.

A part or full-time industrial physician should not undertake the treatment of employees for sickness having no relation to industry simply because the condition appears to be minor, because it came to his attention originally as an emergency and he thinks he might as well continue caring for it, or because it may *possibly* be covered by a provision of the compensation law, *unless* the provisions of his employment specifically provide for such "all coverage" service. The industrial physician, as well as the physician in private practice, when examining industrial cases, should keep in mind that, if in an individual case the provisions of the law act adversely or unfairly to the interests of the

patient, the employer or the insurance carrier, there is nothing that he can do about it. He is practicing subject to laws that are not of his own making, and he is not even interpreting the laws. His activities are properly confined to a *medical* interpretation of the case, and he should be absolutely free from outside pressure in arriving at his conclusions. Any one employing his services may exact only a careful, intelligent and unbiased medical investigation. That is the only way in which industrial medicine can be kept on a high ethical plane, and the only way in which physicians in industry and in private practice can work together in harmony.

With these general remarks as a background, permit me to quote from the Illinois act, and comment upon its dermatologic applications.

Section 6 defines "occupational disease" as follows:

"In this Act the term 'occupational disease' means a disease arising out of and in the course of employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where the said diseases follow as an incident of an occupational disease as defined in this section. A disease shall be deemed to arise out of the employment, only if there is apparent to the rational mind upon consideration of all the circumstances, a direct casual connection between the conditions under which the work is performed and the occupational disease, and which can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment and which can be fairly traced to the employment as the proximate cause, and which does not come from a hazard to which workmen would have been equally exposed outside of the employment. The disease must be incidental to the character of the business and not independent of the relation of employer and employee. The disease need not to have been foreseen or expected but after its contraction it must appear to have had its origin in a risk connected with the employment and to have flowed from that source as a rational consequence."

Any skin disease therefore may legally be an *occupational* disease in Illinois. "If there is apparent to the rational mind a direct casual connection between the conditions under which the work is performed and the disease under consideration." A simple example would be that of a tannery workman acquiring a dermatitis venenata of the hands and forearms following repeated contacts with chrome compounds and in the absence of irritant chemical contacts away from work, such as contact with poison-ivy or with household irritants. The examining doctor may make the diagnosis of "dermatitis venenata" or "contact dermatitis" and then should state what he believes the contact to have been. He bases his opinion on clinical observation and the information obtained from the patient, and, at times, from others, and he may amplify his report by the findings of patch tests. He submits a medical, not a medico-legal report. It is then up to the insurance investigator or the state examiner to determine whether the disease "can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment, and which can be fairly traced to the employment as the proximate cause, and which did not come from a hazard to which he had been equally exposed outside of the employment."

As another example, we may take a case of furunculosis in a machinist, which may be considered of occupational origin by the physician if there has been a direct contact with a similarly infected fellow workman, or if the patient has a predisposing "oil folliculitis" as the result of hair follicles in exposed sites having become repeatedly plugged and irritated by oil or grease while at his job. The definition states that "ordinary diseases of life to which the general public is exposed outside of the employment shall *not* be compensable, *except* where the said diseases follow as an incident of an occupational disease as defined." In this example oil folliculitis, an occupational disease, preceded the furunculosis, "an ordinary disease of life." Here again, the physician makes his diagnosis and states why he considers it to be occupational in origin. It is not his job to investigate the circumstances incidental to its development.

The physician is not required by law to submit written reports in all cases, but insurance companies usually expect them and usually submit report forms for that purpose. Since one cannot always anticipate developments in a case, and a minor case may become disabling or controversial, it is wise to have not only a written case record including diagnosis and opinions on etiology and disability, but to submit such information in writing to the referring individual or organization.

Section 12 provides that, in cases on which hearings are to be held, the physician selected by either the employer or the employee shall furnish to the other party an identical statement in writing of his examination and findings as

reported to the one requesting his services, unless the other party has a physician representing him at the examination. Failure to comply with this provision will bar that physician from testifying at the hearing.

Common occupational skin diseases, like the examples cited, can often be diagnosed and effectively treated by the general physician, and in particular by the industrial physician. Cases of contact dermatitis when causative agents are less obvious, are difficult to diagnose and may require exhaustive dermatologic investigation.

It is well known to dermatologists that systemic or metabolic disturbances, occasional drug hypersensitivities, rare types of food sensitivities, and focal infections with their distant sequelae, as well as direct infections, may produce skin lesions on the hands presenting the appearance of dermatitis venenata as developing following irritant occupational or non-occupational contacts. When that occurs in a worker employed in an industry with a known hazard of contact dermatitis, mistakes in diagnosis are likely to occur. Such mistakes may be aggravated by errors due to patch testing with primary irritants or to errors in interpreting the significance of patch test reactions in the presence of dermatitis. When conditions of this type are chronic they may present a complicated eczema picture.

It is well known that lesions of late syphilis may develop at sites of trauma, and probably less well known, except to dermatologists, that lesions of psoriasis, lichen planus and lupus erythematosus, as well as lesions of some other skin diseases, may make their first appearance at sites of injury and may then become generalized and of long or indefinite duration. How are such cases to be interpreted? In some states they would be automatically ruled out because of not being *"listed"* occupational diseases. Elsewhere they have been the subject of controversy and compensation. The Illinois definition rules out most, if not all, such cases by the phrase "which does not come from a hazard to which workmen would have been *equally* exposed outside of the employment." Obviously a casual injury that may localize a lesion of the kind cited may likewise occur frequently outside of employment and this qualifying phrase in the law is therefore important. Latent cerebral syphilis activitated by a severe head injury at work, or extensive ulcerative syphilis at the site of a severe lacerated wound similarly resulting from an industrial accident should be looked upon as compensable occupational diseases, at least for the period of activity, unless the injury itself is not due to a hazard of the employment, because compensation is not dependent upon any implied assumption of perfect health.

Epidermophytosis or trichophytosis, and other infections belonging to the prevalent "ringworm" group are all "ordinary diseases of life to which the general public is exposed outside of the employment," and they are therefore to be considered occupational diseases only under exceptional circumstances. I have seen ringworm of the nails in a tannery worker who hauled heavy, wet, fresh, hairy hides over a beam in a manner that resulted in repeated trauma and maceration of the finger tips and fingernails. I also recall the case of a tannery superintendent who spent much of the day tramping about at high temperature in heavy rubber boots and who took his baths only at the tannery where he stood on wet floor boards in the shower room and dressing room of the factory. I reported both cases as probably occupationally acquired instances of fungus infection, at the same time stating that I did not consider fungus infections of the hands or feet of workmen to be occupational infections under ordinary conditions of possible acquisition during work; this being an accepted opinion of most dermatologists.

The complicating inflammatory phytid eruptions frequently seen on the hands secondary to fungus infection on the feet or groins and, less commonly elsewhere, are a constant source of difficulty in differentiation from contact dermatitis of possible occupational origin. They are also the cause of controversial discussion among dermatologists as to the part they play in sensitizing the skin of the hands to subsequent occupational or alleged occupational contact dermatitis, and much has been written about them. I have witnessed the introduction at a commission hearing of a positive trichophytin test as evidence for a diagnosis of fungus infection in a contested case. It must be stated that at present the trichophytin test when positive indicates only a sensitivity to the toxin and the possibility of an antecedent or present fungus infection. It proves nothing conclusive in

a medico-legal investigation unless supported by adequate clinical evidence. In this connection it is of interest to mention the recognition by Kammer of torch oil dermatitis of the hands in steel workers who had epidermophytosis of the feet. Elimination of the non-occupational foot infection resulted in recovery from the occupational dermatitis of the hands. In these cases an associated epidermophytid condition of the hands apparently predisposed to the torch oil dermatitis. There are undoubtedly many analagous cases occurring from miscellaneous irritant contacts and from bacterial as well as fungus infections, and this possibility must be kept in mind. The feet and groins should always be carefully examined in all cases of dermatitis of the hands but one should likewise examine the entire skin surface in every case of possible occupational skin disease. What on casual investigation may appear to be an occupational contact dermatitis of the hands, may be proven to be non-occupational by objective evidence of other disease on other body surfaces.

It is an occasional observation that competent physicians, when dealing with skin diseases, do not carry out routine complete dermatologic examinations. I have seen this cause embarrassment to the doctor and sometimes unnecessary expense to the company.

Under the old workmen's compensation act, which provided coverage for dermatitis only following occupational injuries, much importance attached itself to the recognition of infectious eczematoid dermatitis as an entity distinct from "eczema." The former disease is still a frequent and important one in industry and is covered by both acts in this state. It is frequently observed both as a direct complication of injury and as the result of improper medical or nursing management of injuries, and is responsible for prolongation of disability and not infrequently for the development of a generalized resistant eczematoid dermatitis. If localized dermatitis develops in the case of an industrial injury and does not promptly respond to treatment, it is better to refer the patient to a dermatologist for the expert care such cases may require.

The cases that come before the Industrial Commission are usually the kind in which clear cut medical issues do not apply and controversy results. The physician involved may find himself the storm center of a battle of wits between opposing attorneys each of whom endeavors to build up his legal case on medical testimony exacted from the medical witnesses. The doctor on the stand must be alert to the fact that the examiner does not expect medico-legal or legal testimony from him, though the lawyer works toward that end, and often to the embarrassment of the physician.

It is difficult not to be partisan, natural for us to enjoy controversy and easy to be led into making conjectural statements. However, commission hearings are not subject to the formality of civil court jury trials, and the doctor is not always limited to "yes" or "no" answers to categorical questions. He is often permitted to discuss the question and the answer in an informal manner. The medical witness must remember that *he* is not on trial and also that *he* is not trying the case and if he will remember that and testify only as to his own *medical* knowledge and belief, and stick to that line, he will not be led into false or untenable positions.

It is not a legal offense not to know all the answers and the more experience one acquires as a medical witness the less hesitant he will be to say frankly, "I don't know whether this patient's disease is or is not of occupational origin," if that happens to be the case.

Some of you may be thinking, "well this doesn't interest me, and I won't be dragged into the witness stand." You are likely to be if you examine or treat industrial cases, and it is no hardship. Section 16, defining the powers of the industrial commission, authorizes the commission to subpoena and examine witnesses and to issue subpoenas requiring the production of office, hospital or other pertinent records, papers or books, required as evidence in an investigation. The commission or a designated arbitrator, may compel obedience by attachment proceedings for refusal to testify or to comply with the instructions of a subpoena.

Section 5, defining the term "employer," includes hospitals, public service, religious and charitable associations and corporations, but makes the exception that

"nothing contained herein shall be construed to apply to any work, employment, or operations done, had or conducted by farmers and others engaged in *farming, tillage of the soil,* or *stock raising,* or to those who rent, demise or lease land for any such purposes, or to any one in their employ or to any work done on a

farm or country place, no matter what kind of work or service is being done or rendered."

Apparently typical cases of occupational skin diseases such as large spore ringworm infection and kerion acquired in the handling of horses and cattle, blastomycosis, actinomycosis and sporotrichosis occurring in employees on farms and country places, florist establishments, tree nurseries, green houses and "where the soil is tilled," and scores of occupational skin diseases less characteristic of those occupations, but occurring in them, would be excluded from provisions for compensation. There is certainly a greater hazard to injury, inclusive of skin disease, in those activities than in many city occupations that are covered by the law and the latter is inconsistent in this case in not protecting the employees in those categories.

The inclusion of hospitals as employers liable under this act establishes the propriety of a physician charging a fee for the care of a hospital employee with an occupational disease if the hospital has insurance coverage, even though the physician may be a member of that hospital's staff.

Section 5 defines also "disablement" and "disability," and provides that no compensation shall be payable for or on account of any occupational disease, respiratory diseases excepted, unless disablement occurs within one year after the last day of the last exposure to the hazards of the disease.

Section 8 recognizes the fact that a workman may become *partially* incapcitated from pursuing his usual and customary line of employment and provides for *partial* compensation. This is an exceedingly important provision and few laws contain it. A skilled workman, taking as an example a painter, who cannot resume his occupation because of the certain likelihood of recurrent dermatitis will, after recovery, be usually denied further disability compensation but will be forced into a lower economic bracket. This same section provides compensation specifically for serious and permanent disfigurement not covered by other provisions. This would apply to extensive keloids and atrophic scars about the face and neck, resulting from occupational burns and not producing actual disability after healing of the burns.

It is apparently not recognized by the law that an occupation may be only a *contributory* factor in the development of a disabling skin disease. Provision should be made for such cases, in which the compensation should be proportional to the degree to which the occupation is responsible for the skin disease or for the disability.

It is interesting and important to note that in this law, as in other similar laws, there is no provision for medical care in *non-disabling* disease or injury. The reason for this is that the laws have been devised primarily to furnish compensation for the workman whose wages have been stopped by illness or injury. The employer and insurance carrier recognize the desirability of prompt and efficient medical care to prevent disability and therefore usually assume liability on what appears to be a voluntary basis. However, laws should specifically provide for examination and treatment of non-disabling occupational disease or injury. If a workman's case can be handled so expeditiously as to forestall or prevent disability, so much the better for all concerned.

Conservative estimates indicate that approximately 60 per cent. of occupational diseases are skin diseases and about the same percentage of these occupational dermatoses are cases of dermatitis. A large majority of these dermatitides are cases of dermatitis venenata or contact dermatitis, but a significant number must be called eczema, eczematoid dermatitis or eczematous dermatitis for want of a better name, and frequently and importantly because obscure or unknown etiologic factors do not permit a more satisfactory designation. Unfortunately, because of obscure, intangible etiologic factors many such cases last for years or through life and may cause total disability for work.

We must proceed cautiously in making a diagnosis of occupational dermatitis in a case of chronic eczema involving the hands and forearms. The condition may be an eczema of allergic origin in which the occupation may have served merely to temporarily aggravate the skin inflammation or in which an exacerbation of dermatitis may have had no relationship to the work performed. You may not know what the etiology is, but if you say that it *may* be an occupational dermatitis you may be heading for trouble.

In a previous paper I have stated that "Disabling chronic dermatitis, intractable to appropriate treatment and showing no tendency to recover after prolonged removal from the sup-

posed occupational cause, should always be locked on with suspicion as possibly having been originally a nonoccupational allergic condition."

Cases of eczematoid dermatitis in which the primary attack was due to a specific occupational sensitization, and in which frequent relapses or recurrences resulted in the development of a chronic eczema that continued indefinitely after discontinuance of employment, are the result of a gradually developed nonspecific polyvalent cutaneous sensitivity to substances come in contact with in daily life. Such cases may be further complicated by secondary bacterial and fungous infection and result in confusion with infectious allergic dermatitis.

Some cases of intractable chronic eczema of occupational origin, continuing indefinitely after removal from work, occur in elderly employees, of impaired or mediocre physical stock, with obscure foci of infection, degenerative changes in vital organs or defective metabolic processes, all of which contribute to the prolongation of dermatitis and disability.

Cases of this type are usually not seen by the dermatologist until it is too late to determine the etiology with certainty or until polyvalent sensitivities and other complications have rendered them intractable to treatment. Whether or not a case of this nature originated as an occupational dermatitis, the employer or insurance carrier can no longer escape liability. Obviously there is liability, but likewise not sole responsibility, of the employer.

In atopic dermatitis (allergic eczema) the primary shock tissue is the vascular structure of the cutis, and the epidermis becomes involved secondarily. There appears to be a hereditary abnormality or vulnerability of the cutaneous shock tissue in this group and the affected individual may possess a polyvalent sensitivity that results in acute attacks of dermatitis or in aggravations of existing dermatitis, following irritant occupational exposures.

Commonly developing in infancy or childhood and then becoming latent, to appear again in early adult life, atopic dermatitis may readily be mistaken for occupational dermatitis. Many of these cases recur or exacerbate at an age when young men and women leave school to enter industry, and this frequently occurs in autumn, when seasonal factors such as pollen exposures and cold weather may aggravate atopic dermatitis.

Even when it exists, a history of atopy may be difficult or impossible to obtain, particularly from a foreign-born laborer. The worker will admit a history of occupational aggravation more readily than he will disclose a preexisting dermatitis, hay fever or asthma, and if he had an infantile eczema he probably does not know it. Exposed surfaces of the upper extremities, face and neck are usually the sites of predilection for both atopic dermatitis and occupational dermatitis. After either condition has been active for weeks or months it defies dermatologic acumen to determine the etiology. An hereditary atopic dermatitis, aggravated by irritant occupational contacts, may yield a positive patch test to occupational materials and thus result in further confusion.

I believe that the allergist fits into this picture chiefly as a consultant to the dermatologist and I believe that if recognition is accorded to the importance of the dermatologist in the managment of these ill defined cases of the dermatitis and eczema group the interests of both workman and employer will be met most satisfactorily.

It is sometimes difficult for a layman to understand how a workman can acquire an occupational dermatitis after only a few hours of exposure to a certain irritant, especially if such exposure is followed by a latent period of several or more days before appearance of the dermatitis. It is likewise at times beyond lay comprehension how a dermatitis can develop from a material the patient has contacted daily for many years, or how a dermatitis developing in a single employee among hundreds may be occupationally acquired.

Section 25 states: "Presumption of exposure,—An employee shall be conclusively deemed to have been exposed to the hazards of an occupational disease when for any length of time however short he is employed in an occupation or process in which the hazard of the disease exists. The employer liable for the compensation provided in this Act shall be the employer in whose employment the employee was last exposed to the hazard of the occupational disease claimed regardless of the length of time of such last exposure."

There are certain trades in which special hazards exist for the development of occupational dermatoses and there are certain chemicals used in industry that are particularly liable to pro-

duce dermatitis. In some states compensation for occupational skin disease is restricted to employees engaged in these hazardous occupations or exposed to contact with such hazardous substances. Legal provisions of this kind are referred to as "schedules" and adoption of the schedule system has been recommended by both the "Committee on Standard Practices in the Problem of Compensation of Occupational Disease" of the Section in Public Health and Industrial Medicine of the American Medical Association, and by a committee on occupational disease legislation of the American Bar Association. Recognizing the risks of injury or disease in this manner is like paying higher wages for jobs entailing special risks. Reasons for recommending such limitations to legislation are probably that they conserve energies and resources to application where they are most needed, reduce abuse of the laws and reduce the economic loss otherwise accounted for by the limitations of medical diagnosis when the law is wide open.

"Blanket legislation," as applying in Illinois and Wisconsin, and several other states, is certainly fairer to the workman than "schedule legislation" because it recognizes what dermatologists have always recognized, namely, that almost any trade or occupation may be the source of a dermatosis, and any irritant chemical may be the cause of a dermatitis in a susceptible individual. The benefit in blanket legislation is all in favor of the employee; its weakness lies in the failure to take recognition of the shortcomings or difficulties of medical diagnosis, particularly as they apply to the inflammatory skin diseases. Another objection to blanket legislation is that the employer group may be forced to shoulder an unduly heavy economic burden because of liberal compensation provisions but this should result in further advances in industrial hygiene and disease prevention, just as the original compensation act resulted in advances in accident prevention.

In the course of time it will probably be necessary to add legal provisions to our present laws to more clearly define and restrict compensation for the dermatitis group of occupational skin diseases, for we cannot change the nature of disease to clarify interpretation of the law.

In the meantime we can and should devote more time and study to occupational dermatoses, their differentiation and their management, under existing legislation, and in that way increase our own efficiency and advance the practice of medicine in this large and important field.
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VERTIGO AS THE PRIMARY MANIFESTATION IN ANXIETY NEUROSIS

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An analysis of the case of a young woman in whom vertigo was the outstanding symptom of her neurosis, raises some pertinent questions about the interpretation, etiology, and management of vertigo. Cases in which vertigo is just one of several equally evident symptoms of neurosis or anxiety are commonly referred to the psychiatrist, and are discussed frequently in the psychiatric literature. Cases, however, in which severe vertigo is the one primary complaint, obscuring less obvious and often overlooked neurotic manifestations, are more frequently seen by the neurologist and neurosurgeon alone, without psychiatric consideration.

Meniere's syndrome, consisting of sudden and repeated attacks of marked vertigo, tinnitus, deafness, nausea and vomiting, progressing sometimes to permanent and complete deafness is commonly treated by section of the eighth nerve or its vestibular branch, as advocated by Dandy,[1] and a low sodium diet, as Furstenberg[2] (see also Brown[3]). According to Grinker[4], intracranial tumors, hemorrhage into the labyrinths, arteriosclerosis, infections, and (see also Dandy[6]) strangulation of the auditory neurve by intracranial arterial loops, have been suggested as etiological agents.

Frankl-Hochwart (quoted by Dandy[6]) distinguishes this "true" Meniere's syndrome from what he calls pseudo-Meniere's syndrome, which includes a less well-defined group of severe vertigos not associated with tinnitus or deafness, and for which no such specific etiological agents as those associated with true Meniere's, can be detected. The distinction between "true" and

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"pseudo"-Meniere's is not always clear. Some observers[7] think pseudo-Meniere's to be an early stage of Meniere's syndrome. Others[6] place pseudo-Meniere's syndrome on an emotional basis. Dandy[7] reports bilateral section of the vestibular nerve as treatment. That nerve section alleviates or clears up pseudo-Meniere's syndrome does not constitute proof of a non-functional origin, unless one makes the unwarranted assumption that functional disturbances of sensation are exclusively and always of central or cortical derivation. If, on the other hand, this assumption is rejected as untenable, it seems that the abnormal sensation should be eliminated by isolation of the sense organ, whether the stimulus to that organ is purely organic or purely functional.

By what objective criteria may we with assurance differentiate an organic from a functional vertigo? What of the Barany tests? French[8] says that "an increased irritability of the semicircular canals is . . . reported to be the usual finding in neuroses in which vertigo is a symptom. Barany states, indeed, that 'neurasthenia' increases in particular the duration of the horizontal nystagmus following rotation in the verticle plane." Brown[3] reports the Barany tests to be of "little help in differential diagnosis." Patroni[9] reports a case of a young man who for twelve months suffered from severe vertigo, with subjective whirling from left to right, nystagmus, and temporary deafness. The Barany varied from attack to attack in both ears. Because the patient "recovered" without treatment, Patroni concluded that vasomotor dysfunction was responsible. Unfortunately there is no history of the patient's personality, so that we cannot answer the question which is legitimately raised: Might not this case—presenting the classical pictures of true Meniere's syndrome—have been of functional origin?

It is frequently stated that "functional" vertigo may be distinguished from organic vertigo by the presence of whirling sensations in the organic variety. But in the case of depression which he was analyzing, French[8] described sensations of objects moving circularly about, and showed these sensations to be definitely a part of the functional disturbance. Whirling was also a prominent feature of the case to be reported here.

It has been suggested that vasomotor disturbances such as spasms might be responsible for disturbed vestibular sensitivity or whirling sensations. Such suggestions usually carry the implication that if this be true, the condition is of "organic" origin. But could not also a purely *"functional"* vascular spasm markedly affect the sensitivity of the vestibular receptors, modify the Barany tests, and produce whirling sensations? Indeed, might not such spasms, repeated frequently enough, produce actual structural changes in the vestibular (and even cochlear) organs?

Is the presence or absence of deafness a certain criterion for distinguishing organic from functional vertigo? On the one hand, deafness may merely mean that the cochlea as well as the vestibular organs were affected by some such change as a functional vascular spasm. On the other hand, unimpaired hearing could result from an organic lesion affecting only the vestibular organs.

REPORT OF CASE

A married woman of 34 years, the mother of two children, entered the Phipps Clinic of Johns Hopkins Hospital with this story of vertigo as the outstanding complaint: Ten and seven years ago the patient had had brief attacks of light-headedness without whirling, at a gathering of people. Six years before coming to the clinic she married, and a little later she became so dizzy at a theatre party that she had to leave. Since this time she has insisted on having aisle seats at the theatre, and has attended fewer and fewer social functions. Nine months before admission, during a serious and protracted illness of her husband, she had her first violent attack of vertigo, while she was shopping. She felt she was being rapidly whirled about. Reeling, she sat on the curbing, extremely nauseated. The severe whirling continued for five or six hours after she was carried home and put to bed. There was some diarrhea for a day.

As other equally severe attacks followed with increasing frequency, the patient developed a strong fear of leaving the house or being left alone without help. She entertained no guests for fear of an attack in their presence. Although her husband recovered from his illness three months before the patient entered the hospital, her attacks and agoraphobia continued.

At a large eastern clinic the patient was advised to go to Johns Hopkins Hospital for a nerve section. At the suggestion of a lay friend who knew some of the Phipps Clinic staff, the patient visited this clinic first. The psychiatrist who saw the patient could not be sure of the primary difficulty, but recognized evidence of emotional tension behind the story of severe vertigo. The patient was told that a period of observation would

be desirable, to determine whether nerve section was indicated.

The consultant in otolaryngology stated that the caloric tests showed hypersensitivity bilaterally, and added, "if this is Meniere's syndrome, we cannot tell which side is involved." There was no history or objective evidence of deafness or tinnitus. Neurological examination was otherwise negative, and the neurosurgical consultant thought the case to be one of pseudo-Meniere's syndrome. The blood pressure was 125-70, and the serological examination was negative.

On the ward it soon became clear that underlying the major complaint was a great deal of anxiety. Obviously it was impossible at first to determine whether the anxiety was secondary to the attacks, or a primary cause of them. In either event it was felt important that the patient broaden her activities and associate with others. Interviews soon revealed the background and sources of the patient's more immediate anxieties.

The middle child in a well-to-do family of three girls, the patient was reared in a northern town. Her father was tyrannical with her mother and sisters, and interfered with the housekeeping to such an extent that finally the mother left all such matters to him. Consequently the daughters were taught nothing about housekeeping. The mother, socially ambitious, constantly criticized the girls in their choice of companions. The patient lived in constant fear of criticism, "boiling inside," but rarely rebelling openly. She felt that she seldom did as she pleased, although she had college and travel opportunities. She was a handsome, serious-minded girl, with little sense of humor. She was much disturbed by her lack of serious admirers.

On a trip to Europe seven years ago, she met and became engaged to a handsome, prominent and very wealthy southern bachelor of 35. Married to this man, she encountered in him much of what she had experienced in her father. In the husband's family, housekeeping was at a premium. The husband, as well as his sisters and mother, were masters of the art. The patient has always felt humiliated by her own muddled housekeeping, and was greatly upset by the slightest suggestion from her husband. The chief source of her immediate anxiety, however, was finally revealed with a great decrease in her tension and symptoms.

For the first two years of her marriage her husband was utterly devoid of all sexual interest in her, and he missed no opportunity to humiliate her, publicly or privately. He drank inordinately, causing still further chagrin. His behavior was entirely unexpected and without apparent cause. He refused to discuss his conduct with the patient. Suddenly at the end of two years he announced his desire for a child, which arrived in nine months. As this and another child grew older, the husband decreased his drinking "as an example to the children." Marital relations improved somewhat, but the patient's symptoms of dizziness increased, culminating in the attack described, during the illness of her husband nine months before her admission. With the patient's permission, the whole matter was discussed with the husband, who volunteered the following explanation of his behavior.

Three days before his marriage a friend had told him that he had no need to concern himself about contraceptives, because his fiancee had informed herself about such matters. This enraged the husband, who felt that "the first child should be allowed to come naturally." He set out to be deliberately cruel to his wife, and made it plain that she "might leave him whenever she wished." At our suggestion the patient and her husband discussed the entire matter, and thenceforth the patient showed a remarkably rapid loss of her vertigo.

This patient had developed the pattern of repressing anger and resentment toward her father, and she continued in this through the years of miserable existence with her husband. She seemed incapable of expressing her resentments, which she deeply repressed. Of significance is the fact that after her husband had informed her of the cause of his behavior, she still showed no anger at his prudish frigidity. Although it seemed clear that the patient had deeper anxieties to be relieved, she felt so well that she left the clinic after 2½ months of treatment. She remained comfortable for a month, and then she began to have symptoms of anxiety in the form of worries over trivialities about the house, fear of having been too extravagant or too niggardly, dread of the slightest criticism, increased shyness, and easy fatigubility. After four or five months she began to have mild attacks of dizziness, which have lately become more frequent but never so severe as her earlier attacks. Clearly the patient needs further analysis of the sources of her anxieties.

Since it is so difficult to differentiate organic from functional whirling sensations by objective tests or from the patient's description of his abnormal state, it is desirable that a careful psychiatric history be taken in all cases of this sort. It is unfair to the patient to conclude that neurotic elements in this case, such as fear of attacks, are necessarily consequences of the attacks, unless the history reveals no evidence of emotional instability or serious conflicts preceding the attacks, or unless there are correlated physical findings, or positive serology, or neurological changes in other systems than the eighth nerve complex.

Unquestionably a great many cases of Meniere's or pseudo-Meniere's syndrome are on a definitely organic basis primarily, bearing no relationship to the emotional condition of the patient. Yet it is important that the patient be given the benefit of a psychiatric examination if any doubt exists because the diagnosis of an organic basis for the Meniere's or pseudo-Meniere's syndrome carries with it (in some

clinics) advice to the patient to submit to a serious operation.

Institute for Juvenile Research.

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1940 CENSUS WILL BRING VALUABLE VITAL STATISTICS

While the inventors of diabolic instruments of war have been ingeniously practicing their craft, the scientific forces engaged in preservation of life have made even greater progress. Records of the U. S. Bureau of the Census indicate that depletion of population by deaths on the battlefields is of relatively small account, when balanced against the results of the less publicized but equally dramatic contributions to the prolonging of human lives now being made by medical science.

It is possible, through Census records, to make interesting comparisons, for example, of death rates prevailing around 1900 and those of today. If the 1900 figures still governed, over 450,000 more deaths would occur this year in the United States than actually will take place.

In 1900, for instance, tuberculosis caused 201.9 deaths per 100,00 population. Now it causes but 53.6. Using the 1900 ratio against a present estimated U. S. population of 132,000,000, 188,500 Americans who otherwise would die are NOT dying this year from this cause alone—a cause which in the aggregate has cost more lives than the toll exacted in all the wars of history. This year, the *prevention* of deaths from tuberculosis will save more than four times as many people as the number of American soldiers killed on all the World War battlefields.

Forty years ago, influenza and pneumonia were killing about 200 people per 100,00. Now the rate is approximately 110, a saving for today at an annual rate of 117,000 lives. The diphtheria rate has been reduced from 43.3 to 2, a gain of 49,400 lives. Typhoid saving is 44,200.

The Division of Vital Statistics in the Census Bureau keeps accurate records on the 15 maladies against which medical science has made its greatest advances. These are tuberculosis, typhoid, smallpox, measles, scarlet fever, diphtheria, influenza and pneumonia, erysipelas, malaria, bronchitis, diarrhea and enteritis, cirrhosis of the liver, maternity deaths, congenital malformations and diseases of infancy, and nephritis. For these fifteen, the net reduction of deaths per year per 100,000 people has been 542, which would indicate a saving of 704,600 lives this year as against the 1900 mortality rate.

Eight causes have increased in deadliness: cancer, cerebral hemorrhage, heart disease, diabetes mellitus, appendicitis, suicide, homicide, automobile accidents. The new death rate for these is 195 per 100,000 more than in 1900, therefore their current "contribution" over the number of deaths at the 1900 rate would be 253,500. Deduct this figure, therefore, from the savings by medical science, and the net gain this year is 451,100—equivalent to the 1930 population of Arizona, or New Mexico, or Idaho, or New Hampshire, and exceeding by wide margins the total populations of Delaware, District of Columbia, Nevada, Vermont, or Wyoming.

Students of vital statistics, medical men in general sociologists, and the layman can find much to ponder over in these figures. Also to be considered are eight growing causes of death. Why are they growing? What can we do as individuals or professional men and women to combat them?

What are other general trends in American health, life, income, resources? Soon even more up-to-date statistics covering virtually every angle of economic and sociological interest in the United States will be available. The Sixteenth Decennial Census, to be taken in 1940, will inquire in detail into population, occupations, employment, housing, agriculture, drainage and irrigation, and into business and manufactures, and mines and quarries.

The economic censuses—business, manufactures, and mines and quarries—began early in January. The "domestic" enumerations are scheduled for April. Thorough and comprehensive, each census will be on a national basis and, in most cases, will be conducted as a person-to-person affair, with householders and businessmen interviewed by official enumerators direct.

The information collected in all these censuses will give a composite picture of the many affairs of the American nation and its people—a picture of tremendous value in charting the future course of the nation, the states, cities, counties, towns, and villages. Health authorities will keep a careful eye on the figures from these enumerations—when population figures go up and average employment and income fall in a certain section, health of the entire community may be endangered. When deaths from specific causes take a jump, an investigation is indicated to find out "Why?"

Thus, for these and other reasons too numerous to mention, it is essential that every citizen lend his full cooperation toward making each census a complete one. At least one phase of the 940 enumerations—the Census of Population—will touch every person in America directly, and many people will be queried on two or even more of the various schedules.

Answer to Census questions are required by law, but the same statute requires the Census Bureau to maintain its long-established policy not to disclose any facts about individual persons or establishments. Individual reports are not available to any other government department. Assurance thus is given that reports to the Bureau will not be used for taxation, regulation, or investigation.

POLIOMYELITIS VIRUS IN STOOLS OF HEALTHY CONTACTS

During an epidemic of poliomyelitis in a children's home Kramer and his associates isolated the poliomyelitis virus from well persons. At the time of the outbreak, thirty-four children were cared for in the home. Fourteen of these were of school age (from 5 to 16 years) and were permitted considerable freedom within the home, approximately 250 neighborhood children used its twenty children were of infant and preschool ages; they were kept in an entirely separate wing of the institution and, with exceptions, had no direct contact with the older group. In addition to the regular residents of the home, approximately 25 neighborhood children used its facilities as a summer recreational center. Between Aug. 1 and 8, 1939, five cases of poliomyelitis, one fatal and the others nonparalytic, developed in the twenty infants and preschool children of the home. In these children a diagnosis of poliomyelitis was established from typical history, signs, symptoms and spinal fluid observations. Three additional children, for whom no definite diagnosis could be established, had fevers that lasted from twenty-four to forty-eight hours. Poliomyelitis virus was recovered from the stools of three out of twelve healthy children, contacts of these patients, and from two of the three children who had noticeable fevers. Thus, including the five with clinical infections who were not examined for virus, ten of the twenty children harbored poliomyelitis virus at some time during the month of August. Virus was also recovered from the stool of the day nurse in charge of the infant and preschool group of children. Virus was again recovered from stools of two children taken nineteen days after the first positive stools were obtained. Thus, counting from the date of onset of the first case (August 1) to the date of collection of the last positive stool (August 30), the minimal limit of time in which the virus might have been present in some member of the group was thirty days. Poliomyelitis did not occur in any child less than 1 year of age, but stools from three of five children in this age group yielded virus. In three of the five cases, including the one terminating fatally, poliomyelitis occurred in children with recent tonsillectomies and adenoidectomies. However, there were three other children with recent tonsillectomies and adenoidectomies in whom the disease failed to develop. The facts involved in this institutional outbreak are consistent with a theory of transfer of infection by direct personal contact. Although they do not constitute conclusive proof of this, they do offer corroborative evidence that the virus of poliomyelitis is usually spread by healthy carriers. After July 23 the only contacts had by the group of infants and preschool children within the home were with seventeen adult attendants, nine of whom were present daily and eight of whom were present from one to three times a week. One child had been traveling with his mother by automobile in New York State from July 2 to 23. Poliomyelitis developed in this child on August 8. Only one adult attendant was known to have had any association with poliomyelitis outside the institution. This man, a third year medical student in temporary charge of the institution, had played ping-pong during the first week in July with an adult in whom fatal poliomyelitis developed July 20. However, poliomyelitis virus was not recovered from the stool collected from the medical student August 10. The preschool children played daily in a small playground enclosed by a wire fence, which in turn was surrounded by a large playground used by the older children in the home and the neighborhood children. Play between the older and younger children was forbidden, but candy and other materials were passed through the fence, and the older children occasionally used the preschool children's swings. There were four cases of poliomyelitis reported within a radius of about five blocks of the home. The dates of onset of illness in these cases were July 23 and August 8, 12 and 17. A survey of 137 homes, selected at random in the same area, revealed cases of suggestive illnesses having onsets early in August, but no other cases which could be definitely called poliomyelitis. None of the fourteen older children at the home were reported has having poliomyelitis. Only two of the adult attendants had any illness of any character during the period of the epidemic. The medical student already referred to had a headache and vague pains in the neck and shoulder but no fever from August 10 to 13. The night nurse had headache, diarrhea, nausea and vomiting from August 14 to 19. Virus was not recovered from her stool specimen collected August 26.—J. A. M. A.

EVIDENCE: COURT WILL NOT TAKE JUDICIAL NOTICE OF EFFICACY OF SO-CALLED LIE DETECTOR

The defendant was prosecuted for homicide. At the trial a ballistic expert testified that in his opinion the two bullets that killed the deseased had been fired from a revolver which was found on the defendant at the time of his arrest. After all the evidence had been produced for the jury's consideration the defendant's counsel moved that the case be reopened to permit him to cause the defendant to be examined "under the pathometer, commonly known as the 'lie detector.'" The motion was denied. The defendant was convicted of first degree murder and thereupon appealed to the Court of Appeals of New York.

The only objection offered by the defendant that the Court of Appeals thought might reasonably have affected the verdict of the jury had reference to the refusal of the trial court to reopen the case to permit the defendant to be subjected to examination under the so-called lie detector. But, said the court, we cannot take judicial notice that this instrument is or is not effective for the purpose of determining the truth. The court questioned whether it could be depended on to operate with complete success on persons of varying emotional stability. The record, the court pointed out, was devoid of evidence tending to show a general scientific recognition that the device referred to as the pathometer was efficient. Until it was demonstrated that the device was recognized by experts as possessing such value that reasonable certainty would follow tests made under it, it could not be held as a matter of law that the trial court had erred in refusing to allow the defendant to experi-

ment with it. The judgment of conviction was affirmed. —People v. Forte (N. Y.), 18 N. E. (2d) 31.—J. A. M. A.

MEDICOLEGAL ABSTRACTS

Compensation of Physicians: Liability of Third Person for Medical and Hospital Services Rendered at His Request.—Morris was injured while doing farm work for the defendant. The following day the plaintiff was called on to attend the injured man. As to whether or not the defendant called him, the evidence was conflicting. According to the plaintiff physician's testimony, however, the defendant on the following day told him to render such medical treatment and provide such hospitalization as might be necessary and that he would pay for them. The plaintiff then removed Morris to his hospital. There he again examined him and made roentgenograms, an interpretation of which was given to the defendant at that time. On that occasion, according to the plaintiff's testimony, which was corroborated by that of another physician, a dentist and a nurse, the defendant again promised to pay for such services as might be rendered. The plaintiff physician entered on his account books, against the defendant, all charges for services rendered to Morris. He received from the defendant several payments by checks, in some of which he was named as payee. On June 14, in response to a statement of account, he received from the defendant another check on which appeared the notation "H. Morris Acct." Thereafter the defendant disclaimed responsibility for the medical and hospital services rendered to Morris, and the plaintiff instituted this suit to recover the balance due for those services. At the trial, the defendant denied that he had requested the plaintiff to render the services which he had rendered to Morris or that he had promised to pay for them. He offered evidence to show that the amounts which he had paid to the plaintiff had been deducted from the wages of Morris, which he continued to pay during Morris's period of disability. The jury, in a special verdict, found that on March 28 the defendant requested the plaintiff to render such medical and hospital services as were necessary but that he did not promise to pay for them. The trial court concluded that the circumstances showed an intention on the part of the defendant to pay for such services and that the plaintiff so understood. It therefore held the defendant liable on an implied contract and rendered judgment for the plaintiff. The defendant thereupon appealed to the Supreme Court of Wisconsin.

The defendant contended that in the absence of an express contract he could not be held liable for the medical and hospital services rendered to Morris at his request, since he was not legally bound to furnish such services. The Supreme Court, however, thought otherwise. As a general rule, it said, the law will not raise an implied promise to pay on the part of a person who requests a physician to render services to another unless the relation of that person to the patient is such as to put him under a legal obligation to provide the medical services requested. If there is proof of circumstances, however, including the acts and conduct of the person who calls the physician, sufficient to establish an intention on the part of that person to pay, the general rule does not apply. In the judgment of the Supreme Court, the trial court correctly refused to apply the general rule in this case.

Judgment in favor of the plaintiff physician was affirmed.—Andrew v. Brecker (Wis.), 282 N. W. 609.—J. A. M. A.

TUBERCULOSIS IN NURSES

According to Rhoads and his associates, from 1930 to 1937 inclusive fifty-two cases of tuberculosis were found in a group of 991 nurses. Ten of these were found within three months of the time the nurses came to Cook County Hospital, so that undoubtedly the nurses were already infected at the time they went on duty. Only one had a routine physical examination and rotengenogram of the chest on entrance to training at the hospital, when the tuberculosis was discovered. All the others presented satisfactory certificates of physical examination made just before their entrance. The need for roentgenograms of the chest was thus amply demonstrated. Particularly interesting was the fact that five affiliate nurses, who supposedly had been under supervision at their own hospitals up to the time they came to Cook County Hospital for training, were found to have active tuberculosis. Comparison of tuberculosis in nurses of Cook County Hospital with other groups of nurses and medical students shows that the incidence is about the same. Tuberculin testing at the Cook County Hospital has been done as a matter of routine only on the student groups and follow-up testing only for the past two years. In the relatively small group retested at the end of two years of training 62 per cent of those who originally had negative reactions to the Mantoux test now had positive reactions. Of the 778 graduates and permanent staff nurses tested after this survey was begun, 93.4 per cent were found to have positive reactions. In all likelihood tests on students at the end of three years would give comparable results. At the Cook County Hospital all students and many affiliates and graduates are required to take the regular tuberculosis service of three months. There is also exposure to active tuberculosis in the medical wards and orthopedic wards and in the children's hospital. The incidence of positive reactors among entering students is practically identical with that in other similar age groups in the general population. A striking feature of the present study is the high incidence of a family historyy off tuberculosis among those nurses in whom active disease developed (34.6 per cent of the group contracting active tuberculosis as compared with 4.7 per cent of 500 healthy nurses chosen at random from equal groups of students, affiliates, postgraduates and graduates); 23.1 per cent of those with active involvement had been on duty in wards of the tuberculosis hospital. Nearly half of the nurses with active infections who reported for examination did so because of loss of weight, indicating the value of monthly weight records for all nurses. Other symptoms were cough, fatigue, thoracic pain and fever. The nine instances in which there were no complaints but the in-

fection was discovered only by roentgenograms of the chest seem to justify the considerable expense required for roengenograms of the chest of all students and all positive reactors to the Mantoux test in the other groups. This examination is now being made. After consideration of these data a program for preventing tuberculosis among nurses at the Cook County Hospital, similar to that originally suggested by Myers (1938), has gone into effect.—J. A. M. A.

A FEW COMMON MISTAKES

1. It is incorrect to say the patient had "no temperature." One may say there was "no elevation of temperature," but it is shorter to say there was "no fever."
2. "Acute appendicitis" is common, but an appendix can not be "acute."
3. "Shot" is perhaps the most abused and overworked word in medical literature. Shot is of lead.
4. "Tubercular" means "nodular"; "tuberculosis" means "infected with the bacillus of tuberculosis."
5. "Case" must not be used for "patient," nor "cure" for "treatment."
6. "Cystoscope" is a noun and must not be used as any other part of speech.
7. It is possible to "operate a cotton-gin," but it is not possible to "operate a patient"—nor his appendix.
8. "Pathology" means the "science of disease"; it is therefore absurd to speak of "pathology in the right lung."
9. "Specific" and "luetic" are convenient to obscure meanings from patients' relatives, but syphilitic" is better in writing for the medical professon.
10. "Postive serology" is the worst type of jargon; apparently "positive Wasserman reaction is usually meant.

Society Proceedings

Coming Meetings

January 10—McDonough County Medical Society—Macomb, Lamoine Hotel, Dinner 6:15 P. M. Dr. Philip Thorek—"Differential Diagnosis of Acute Abdomen."

January 11—Union County Medical Society—Anna, Anna Hotel, Dinner 6:30 P.M. Dr. Leon Unger—"Newer Phases of Migraine."

January 11—Whiteside County Medical Society—Sterling, Public Hospital, Dinner 6:30 P.M. Dr. Arthur F. Abt—"Pros and Cons for Sulfanilamide Therapy in Infants and Children."

January 12—Will-Grundy County Medical Society—Joliet, Louis Joliet Hotel, Luncheon 12:00 Noon.

January 12—Jersey-Greene County Medical Societies—Carrollton, Baptist Church, Dinner 6:30 P. M. Dr. Joseph Baer—"The Endocrines in Obstetrics and Gynecology. Dr. Harry Poncher—"Feeding the Baby."

January 16—The Kankakee County Medical Society will hold a meeting at their Club rooms, Kankakee, at 8:00 P. M. Dr. Charles B. Puestow, Chicago, will speak on "Surgery of the Gall Bladder and Bile-Duct."

January 16—Perry Memorial Hospital Staff—Princeton—Dinner 6:00 P.M. Dr. M. P. Borovsky—"The Newly Born."

January 16—Fayette County Medical Society—Vandalia, Evans Hotel, Dinner 6:30 P.M. Dr. E. L. Dorsett—"The Management of Dystocia."

January 16—Knox County Medical and Dental Societies—Galesburg, Galesburg Club—Evening. Dr. Carroll W. Stuart—"What a Hospital Staff May Expect of Its Oral Surgeon."

January 18—The Monroe County Medical Society will hold a scientific meeting at noon at the B. Hive, Waterloo, Illinois. Dr. W. J. Morginson, Springfield, will speak on "Diagnosis and Treatment of Common Skin Diseases."

January 19—Will-Grundy County Medical Society—Joliet, Louis Joliet Hotel, Luncheon 12:00 Noon.

January 23—Iroquois County Medical Society—Watseka, Dinner 6:30 P.M. Dr. Lowell F. Bushnell—"Endocrinology."

January 24—Christian County Medical Society—Taylorville, Country Club, Dinner 6:30 P.M. Dr. Henry Buxbaum—"Toxemias of Pregnancy." Dr. Julius Hess—"The Premature Infant."

January 25—Saline County Medical Society—Harrisburg, City Hall, 8:00 P. M. Dr. W. J. Dieckman—"Eclampsia."

January 25—Logan County Medical Society—Lincoln, 7:00 P.M. Dr. Ralph Reis—"Management of the Puerperium and Its Complications." Dr. H. J. Noyes—Dental Caries from the Standpoint of Knowledge of Etiology, Treatment and Dental Caries as an Index of Nutritional Adjustment."

January 25—Montgomery County Medical Society—St. Francis Hospital, Litchfield, 4:30 P.M. Clinic—Dinner at 7:00, Elks Club—Dr. James J. Callahan.

January 26—Will-Grundy County Medical Society—Joliet, Louis Joliet Hotel, Luncheon 12:00 Noon.

February 2—Will Grundy County Medical Society—Joliet, Louis Joliet Hotel, Luncheon 12:00 Noon.

February 5—Menard-Mason County Medical Societies—Mason City, Masonic Hall, 7:30 P. M.—Dr. Irving Stein—"Forceps Delivery." Dr. Gerald Cline—"Skin Disorders in Children (Allergy)."

February 5—Physicians Club of Kewanee—Kewanee, Kewanee Public Hospital, Dinner 6:00 P.M. Dr. A. H. Klawans—"Gynecologic Difficulties as the Result of Obstetrics." Dr. A. W. Stillians—"Skin Disorders in Children."

February 6—Vermilion County Medical Society—Danville, Dinner 6:30 P.M. Dr. Elias Selinger—"Eye Diseases in General Practice."

February 7—Schmitt Memorial Hospital—Beardstown, Dinner 6:15 P.M. Dr. Craig Butler—"Feeding the Newborn Baby."

February 8—Ford County—Paxton, Middlecoff Hotel —Dinner 6:30 P.M. Dr. L. T. Gregory—Surgical subject.

February 9—Jersey-Greene Medical Societies—White Hall Hotel, White Hall, Dinner 6:30 P.M. Dr. H. C. Hesseltine—"The Recognition and Management of Urinary Tract Infections in the Obstetrical Patient." Dr. Gerald Cline—"The Prophylaxis of Contagious Diseases."

February 13—Bond County Medical Society—Greeneville, Thomas Hotel, Dinner 7:00 P.M. Dr. Sidney Levinson—"Poliomyelitis." Dr. Richard Paddock—"Pernicious Vomiting and Toxemias of Pregnancy."

February 13—Effingham County Medical Society—Effingham, Benwood Hotel, Dinner 6:30 P.M. Dr. R. S. McCaughey—"Common Colds and Upper Respiratory Infections."

Marriages

Vincent J. Gaul, Chicago, to Miss Ruth Wigent, of Fort Wayne, Ind., in October.

Paul Russell Griffith to Miss Ida Louise McCoy, both of Berwyn, Ill., November 4.

Carl Frederick Neuhoff to Miss Hazel Louise Davenport, both of Peoria, Ill., October 14.

Personals

Dr. Joseph L. Baer, Chicago, addressed the Lake County Medical Society, December 5, on "Prevention of Maternal Mortality."

Dr. Otto H. Schwarz, St. Louis, discussed "Use of X-Ray in Obstetrics" before the Sangamon County Medical Society, Springfield, December 7.

Dr. Edward L. Compere, Chicago, was reelected president of the Illinois Association for the Crippled at its recent meeting in Chicago.

Ralph H. Müller, Ph.D., New York, opened a series of six lecture-conferences and demonstrations at the University of Chicago, November 6, on "Electronics in Chemistry and Technology."

A symposium on hydronephrosis was presented before the Chicago Council of Medical Women, November 8, by Drs. Elizabeth Rothfus Gischer, Elizabeth Clancy, Marie Ortmayer, Lillian Eichelberger and Eleanor M. Humphreys.

Dr. Frederick A. Jostes, St. Louis, discussed "Backache: A Manipulative Treatment Without Anesthesia" at a meeting of the Adams County Medical Society in Quincy, November 13.

Dr. Oliver E. Van Alyea, Chicago, discussed "Irrigation of the Frontal and Maxillary Sinuses" before the Rock River Valley Eye, Ear, Nose and Throat Society in Rockford, November 21.

At a meeting of the Sangamon County Medical Society in Springfield, November 2, Dr. Vernon C. David, Chicago, spoke on "Carcinoma of the Sigmoid and Rectum."

Dr. James H. Hutton, Chicago, addressed the Lawrence County Medical Society at Lawrenceville, November 1, on "Classification and Management of the Nervous Hypotensive Patient."

Dr. Milton H. Kronenberg, Chicago, read a paper before the Winnebago County Medical Society at Rockford, November 3, entitled "The General Practitioner's Approach to Industrial Hygiene."

Dr. Benjamin M. Levin, Chicago, discussed "Surgical Diseases of Childhood" before the Bureau County Medical Society in Princeton, November 21.

Dr. Roland M. Klemme, St. Louis, discussed "Surgical Treatment of Parkinson's Disease" before the Champaign County Medical Society, November 9.

A symposium on the treatment of prostatism was presented before the Chicago Urological Society, November 30, by Drs. Herman L. Kretchmer, Harry C. Rolnick and Gustav Kolischer.

Dr. William Allen Pusey delivered a public lecture in the auditorium of the Museum of Science and Industry, west pavilion, Jackson Park, January 9, on "High Lights in the History of Chicago Medicine." The lecture is sponsored by the Institute of Medicine of Chicago in conjunction with the Chicago Historical Society and the Society of Medical History of Chicago.

Dr. Irving L. Turow, Peoria, was elected president of the Physicians' Association of the Illinois State Department of Public Welfare at its meeting in Peoria, October 12; Dr. George L. Perkins, Manteno State Hospital, was chosen vice president and Dr. Jacob W. Klapman, Chi-

cago State Hospital, was reelected secretary-treasurer.

The speakers before the Chicago Pediatric Society, December 19, were Drs. Philip L. Aries on "An X-Ray Study of the Osseous Development in the Newborn with Special Reference to Congenital Syphilis" and Ernst Gellhorn, "Clinical Implications of Recent Studies on Anoxia and Asphyxia."

Among the speakers before the Chicago Laryngological and Otological Society, December 4, were the following: Drs. J. Allan Weiss on "Mucocele of the Frontal Sinus"; Robert Henner, "Endaural Complete Mastoidectomy and Attico-Mastoidectomy," and Frank J. Piszkiewicz, "Nasopharyngeal Tuberculosis"; all are members of the staff of the Illinois Eye and Ear Infirmary.

Dr. Paul H. Harmon, formerly director of the crippled children's bureau for the state department of welfare of Illinois and instructor in orthopedic surgery at the University of Chicago, has been appointed to the staff of the Guthrie Clinic and Robert Packer Hospital, Sayre, Pa., as orthopedic surgeon, effective January 1.

At a meeting of the Chicago Gynecological Society, December 15, the speakers included Drs. Ralph E. Campbell, Madison, Wis., on "Angular Pregnancy"; Louis Rudolph, "Pseudo-Uterus Bicornis," and Morris Edward Davis, "Stilbestrol, a New Synthetic Organic Estrogen: A Clinical Study."

Dr. Max Thorek addressed the Lackawanna County Medical Society at Scranton, Pa., on December 19, on "Electrosurgical Obliteration of the Gallbladder (Report of 689 cases)."

Dr. Aaron Samuel Leven was the guest speaker at the Alpha Omega Dental Society meeting held at the Hotel La Salle, on November 29, 1939. The subject of his address was, "My Impressions of the U. S. S. R., with Particular Attention to the Medical Problem."

Dr. Clayton J. Lundy spoke before the Winnebago Medical Society, December 12. His subject was "The Diagnosis and Treatment of Arteriosclerotic Heart Disease, Including Complications."

Dr. S. L. Governale read a paper on Biliary Diseases before the Porter County Medical Society, November 28.

Dr. Charles B. Reed will give a paper on "Sterility" and Dr. Gus Wienfeld on "Mental Hygiene" before the physicians of Kewanee on January 2.

Drs. M. Herbert Barker, H. A. Lindberg and William L. Winters presented a symposium on "Pneumonia" before the Vermilion County Medical Society at Danville on January 2.

Dr. Kellogg Speed is scheduled to speak on "Fractures About the Elbow Joint" before the doctors of the Madison County Medical Society on January 5.

Dr. Willard L. Wood was the guest speaker at the monthly meeting of the Milwaukee County and City Medical Society, November 11. The subject was "Arthritis."

Dr. O. E. Van Alyea addressed the Rock River Valley Eye, Ear, Nose and Throat Society at Rockford, November 21. His subject was, "Irrigation of the Frontal and Maxillary Sinuses."

Dr. Charles M. McKenna was the guest speaker at the meeting of the Southeastern Branch, American Urological Association, held at Biloxi, Mississippi, December 8, 1939. The subject of his address was, "Some Anomalies of the Lower Genito-Urinary Tract in Children, with Special Reference to the Transplantation of the Ureter for Exstrophy of the Bladder."

Dr. Samuel M. Feinberg was invited to speak to the Kings County Medical Society and the Academy of Medicine of Brooklyn, at Brooklyn, New York, on December 19. The subject of his talk was "Inhalant Allergy: Recent Experiences."

Dr. C. O. Schneider spoke at a free public lecture at the Auditorium of the Chicago Academy of Science, Sunday, December 17, on "Nature's Architecture" showing some of the recent advances in color photography.

News Notes

—The Chicago Society of Internal Medicine was addressed November 27 by Drs. Michael H. Streicher on "Appendicitis — Incidence of Amebiasis in a Clinical Review of 3,407 Cases"; Ralph B. Bettman and Gemma M. Lichtenstein,

"Acute Cholecystitis," and Laurence E. Hines, Allen H. Hoover and Edwin Graff, "Effect of Sulfanilamide on the Fibrinolytic Activity of Hemolytic Streptococci."

—The Tuberculosis Institute of Chicago and Cook County through the Theodore B. Sachs Memorial Fund has made $1,000 available to support a study on bronchiectasis and pulmonary abscesses at the University of Illinois College of Medicine. The work is being conducted by Drs. Felix Basch of the department of pediatrics and Paul H. Holinger of the department of otolaryngology.

—Dr. Marshall Davison, chairman of the surgical division of Cook County Hospital, has been appointed medical director of the hospital, a newly created position. In this capacity Dr. Davison will coordinate and correlate activities of the staff and have jurisdiction over all medical and surgical work at the hospital. Dr. Karl Meyer will continue as medical superintendent. Dr. Davison graduated at the University of Illinois College of Medicine in 1920. He is assistant professor of surgery at Northwestern University Medical School.

—At a postgraduate medical conference in Champaign, December 7, an ingenious device was used to assist speakers in staying within the twenty minutes allotted for papers. A stop-and-go light on the table showed green as the speaker began his address, turned yellow when three minutes was left and red when the twenty minutes was at an end. The apparatus was made by local men and, according to the secretary of the state medical society, Dr. Harold M. Camp, Monmouth, it is recommended for keeping speakers from running over specified time limits. The Champaign conference was the second in a series sponsored by the state medical society; 208 physicians representing sixty-five cities and towns in thirty counties attended.

—The sixty-sixth annual meeting of the North Central Illinois Medical Society was held in Bloomington December 12. The speakers included:

Dr. Benjamin Markowitz, Bloomington, Jaundice Types.

Dr. Emil D. W. Hauser, Chicago, Problems of the Foot.

Dr. Milton G. Bohrod, Peoria, Biopsy of Lymph Nodes for Diagnoses.

Dr. Aaron Arkin, Chicago, Blood Dyscrasias.

Dr. LeRoy H. Sloan, Chicago, Neurologic Problems.

Dr. James Herbert Mitchell, Chicago, Differential Diagnosis of Cutaneous and Mucous Membrane Syphilis.

Dr. Norris J. Heckel, Chicago, Newer Advances in the Treatment of Infections of the Genito-Urinary Tract.

Dr. Edwin M. Miller, Chicago, Fractures About the Elbow.

Dr. Warren H. Cole, Chicago, Surgical Aspects of Diseases of the Pancreas.

Dr. M. Herbert Barker, Chicago, Hypertension.

Drs. Robert S. Berghoff and Donald A. Hirsch, both of Chicago, conducted a heart clinic.

—Northwestern University will receive $1,500,000 and the University of Chicago $1,000,000 under the will of the late Mrs. Clara A. Abbott, widow of Dr. Wallace C. Abbott, founder of the Abbott Laboratories in North Chicago. The money in both instances is to be used for medical, surgical or chemical research. It was announced that the Physiological Building at the University of Chicago would be renamed Abbott Memorial Building, while Northwestern plans to give the name of Abbott Hall to the eighteen story dormitory which is being erected on the Chicago campus. The bequest to the University of Chicago assures an additional grant of $1,500,000 to the university from the Rockefeller Foundation, which in 1938 offered the grant for research in the biologic sciences on condition that the university obtain an additional $500,000 by 1941.

Deaths

Bernard Oliver Amberson, Chicago; Rush Medical College, Chicago, a Fellow, A. M. A.; 1929; aged 37, died, October 18, at Manteno, Ill.

David Baker, Colonel, U. S. Army, retired, Waltonville, Ill.; Barnes Medical College, St. Louis, a Fellow, A. M. A.; 1893; fellow of the American College of Surgeons; veteran of the Spanish-American War; was

commissioned an assistant surgeon in 1898, a captain in the medical corps of the U. S. Army in 1903 and rose through the various ranks to that of colonel in 1917; retired in 1935 by operation of law; aged 68; died, September 8, at Fort Sam Houston, Texas.

Ulric Antonio Bedard, Kankakee, Ill.; Rush Medical College, Chicago, 1894; aged 73; died, November 11, of coronary thrombosis.

Edwin Merville Bennett, Paris, Ill.; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; member of the Illinois State Medical Society; served during the World War; aged 72; died, October 14, of coronary thrombosis.

Homer Chambliss, Cairo, Ill.; Meharry Medical College, Nashville, Tenn., 1924; member of the Illinois State Medical Society; aged 40, died, November 8, in the Passavant Hospital, Chicago.

George W. Fockler, Delavan, Ill.; Jefferson Medical College of Philadelphia, 1887; aged 76; died, October 28, of carcinoma of the prostate.

Anton Philip Freund, Chicago; Bennett Medical College, Chicago, 1911; served in the U. S. Public Health Service; on the staff of the American Hospital; aged 76, died, October 15.

Oscar Brunk Funkhouser, Chicago; College of Physicians and Surgeons of Chicago, a Fellow, A. M. A.; School of Medicine of the University of Illinois, 1907; Northwestern University Medical School, Chicago, 1909; aged 53; died, October 17, in the Washington Boulevard Hospital of mitral insufficiency.

George Washington Cassady, Chicago; Jenner Medical College, Chicago, 1900; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; aged 72; on the staff of St. Elizabeth's Hospital, where he died, October 10, of pernicious anemia.

David Leonard Hedberg, Evanston, Ill.; Northwestern University Medical School, Chicago, 1909; served during the World War; at one time police surgeon; aged 61; died, November 19, in the Veterans Administration Facility, Dearborn.

Charles Rohrer Kiser, Madison, Ill.; Medical College of Ohio, a Fellow, A. M. A.; Cincinnati, 1895; past president of the Madison County Medical Society; aged 72; died, November 5, in a hospital at Hamilton, Ont., of a skull fracture received in an automobile accident.

William M. Lottridge, Littleton, Ill.; Columbus Medical, 1880; aged 89; died, October 21, of heart disease.

Bertram A. Martin, Mineral, Ill.; Northwestern University Medical School, Chicago, 1893; aged 69; died, October 30, in the J. C. Hammond City Hospital, Geneseo, of heart disease.

Francis M. Martin, East St. Louis, Ill. (licensed in Indiana in 1898); aged 85; died, October 23, in Belleville of bronchopneumonia.

Jacob John Minke, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; served during the World War; physician in chief to the Oak Forest (Ill.) County Infirmary; aged 56; died, October 1.

Roscoe Addison Mitchell, Marshall, Ill.; State College of Physicians and Surgeons, Indianapolis, 1907; member of the Illinois State Medical Society, for many years bank president; served during the World War; aged 60; died, November 12, at the Paris (Ill.) Hospital as the result of a cerebral hemorrhage.

Clifford Mitchell, Chicago; Chicago Homeopathic Medical College, 1878; formerly professor of renal diseases and clinical urology at Hahnemann Medical College and Hospital; aged 85; died, October 19.

Charles Eugene Parker, Sterling, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; a Fellow, A. M. A.; on the staff of the Public Hospital; aged 69; died, October 23, of arteriosclerosis.

William Stanley Reilly, Joliet, Ill.; St. Louis University School of Medicine, 1917; served during the World War; aged 47; died, September 26, in the Veterans Administration Facility, Hines.

Emil Reiss, Chicago; Kaiser-Wilhelms-Universität Medizinische Fakultät, Strassburg, Germany, 188; past president of the Jackson Park Branch of the Chicago Medical Society and of the Chicago Gynecological Society; member of the Central Association of Obstetricians and Gynecologists; aged 74; died, November 14, of coronary occlusion.

Oliver James Roskoten, Peoria, Ill.; Rush Medical College, Chicago, 1882; a Fellow, A. M. A.; an Affiliate Fellow of the American Medical Association; aged 81; died, November 5.

Francis Marion Sanders, Herrin, Ill.; St. Louis College of Physicians and Surgeons, 1904; member of the Illinois State Medical Society; was a member of the school board; aged 72; died, October 19, of heart disease.

Arthur P. Shearburn, Walnut, Ill.; Chicago Homeopathic Medical College, 893; member of the school board and formerly mayor; aged 77; died, October 8, in the Julia Rackley Perry Memorial Hospital, Princeton.

Walter N. Thomas, Chicago; Reliance Medical College, Chicago, 909; aged 59; died, October 18, of coronary occlusion.

Guy Watts Wagner, a Fellow, A. M. A.; Chicago; Northwestern University Medical School, Chicago, 1899; served during the World War; on the staff of the Henrotin Hospital; aged 65; died, October 7.

William Walter Wyatt, Peoria, Ill.; Illinois Medical College, Chicago, 1903; member of the Illinois State Medical Society; served the Methodist Hospital in various capacities; aged 74; died, October 22, of coronary thrombosis.

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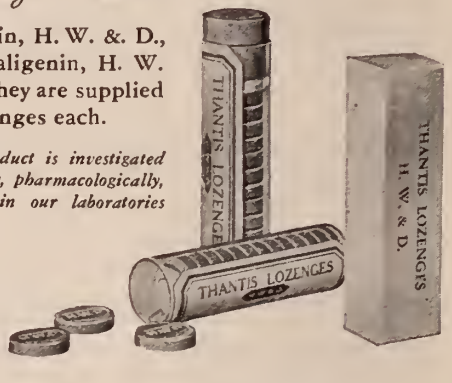
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Though the U.S. has 13,000,000 people—10% of the population—who have some sort of speech defect or voice abnormality, including 1,000,000 speech stutterers, not all "stuttering" is expressed in faltering speech, according to Dr. James S. Greene, director of the National Hospital for Speech Disorders. He identifies "stutter" types among persons who show hesitation when playing musical instruments, driving an automobile, playing golf or engaging in other activities that call for somewhat less delicate motor coordination than speech itself. The stutter-like hesitancy, which often has an hereditary background, is likewise psychic in origin and represents a partial or total blockage of motor activity by uncontrolled emotional impulses.

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Pryor and Smith measured the physical strength of 100 adolescent girls every six months for a period of seven years; that is, from 10 to 17 years of age. Right and left hand grip were averaged with pushing and pulling scores, and plotted against age. Strength increased with age for the total group from 10 to 15½ years, after which the curve flattened. When curves for strength tests were plotted in three groups according to body build, a marked difference was demonstrated between broad and slender girls. Broad girls were shown to possess consistently superior physical capacity by this standard when compared to slender girls through the adolescent period. Broad and slender body builds appeared to represent definite and distinct enocrine patterns.—Physical Strength of Adolescent Girls, Helen Brenton Pryor and RuthTangier Smith, Stanford University, Calif. Journal of Pediatrics, May, 1939, p. 610. Abstracted in The Journal of the American Medical Association, July 22, 1939, p. 363.

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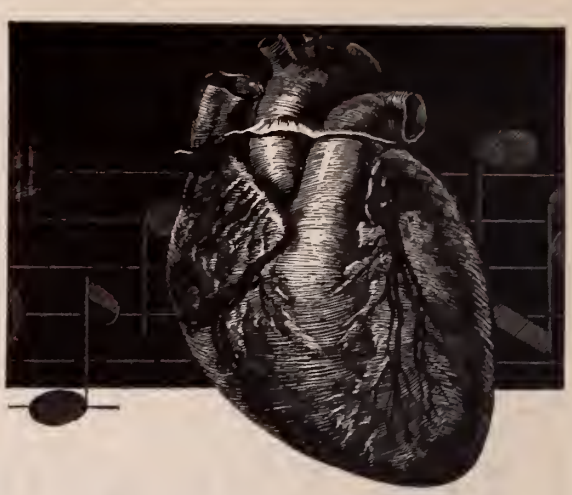
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In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

Recommended in medical literature for the treatment of whooping cough.

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NARCOTIC PRESCRIPTIONS

The Federal Division of Narcotics has recently issued a warning to pharmacists that it is illegal for them to fill telephone prescriptions for narcotics without receiving a prescription from the physician to place on file before the medicine is delivered to the patient.

The Bureau has requested the cooperation of all physicians in the observance of this ruling.

STUDY OF POLIOMYELITIS

The successful transmission of a strain of poliomyelitis to the Eastern cotton rat, recently reported by the National Institute of Health of the United Sates Public Health Service, is regarded as an epochal development in the study of this disease.

The virus which causes poliomyelitis now has been carried through seven transfers in the Eastern cotton rat. The symptoms produced are a counterpart of those observed in children in that one or more limbs or even the respiratory muscles may become paralyzed. Virus from the second and fifth rodent transfers produced typical experimental poliomyelitis when returned to monkeys.—Health News, New York State Department of Health, October 2, 1939, p. 162.

DO YOU KNOW THAT

Out of England's mystery of exploding gasoline storage tanks has come the amazing discovery of a species of bacteria which can live on kerosene and ferment it into ethane and methane fuel gases, just as ordinary bacteria can ferment sugar into alcohol?

Air in the Stratosphere is hot enough to boil water?

Rumania has grain, wood and the richest oil fields in Europe?

Such dangerous germs as the streptococcus can be fought better at cool temperatures than at hot ones?

Fresh pineapple juice has a specific medicinal value?

Synthetic camphor, made from turpentine, has broken Japan's monopoly? It is now being produced by the DuPont Company in U.S.

Book Reviews

An Introdction to Gastro-Enterology (being the third edition of The Mechanics of the Digestive Tract). By Walter C. Alvarez. With 186 illustrations. New York-London. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers. 1940. Price $10.00.

This volume has been completely rewritten and considerably broadened in scope. The material has been completely brought up-to-date and seven new chapters and many new illustrations have been added. It presents the modern physiologic approach of gastro-enterology. It supplies the clinician with a basic understanding of digestive tract phenomena seen in everyday practice and thereby points the way to sound diagnosis and treatment. A convenient summary appears at the end of each chapter. A bibliography of more than twenty-two hundred references is supplied.

Lane Medical Lectures: Viruses and Virus Diseases. By Thomas M. Rivers, M. D. Stanford University Press. 1939.

This is one of Stanford University publications, University Series, Medical Science, Volume IV, Number I.

Handbook of Skin Diseases. By Leon Hugh Warren, M. D. With a Foreword by Frederick D. Weidman, M. D. New York-London. Paul B. Hoeber, Inc. Medical Department of Harper & Brothers. 1940. Price, $3.50.

This practical manual is designed to supply that aide de memoire and synoptic guide to diagnosis and treatment of the multitude of skin diseases which is so urgently needed. The book presents the salient features of some 250 skin diseases. Lines of treatment are indicated for each, conforming to modern dynamic concepts. A comprehensive workable index rounds out the handbook.

Biological Products. By Louis Gershenfeld, P. D. New York. Romaine Pierson Publishers, Inc. 1939. Price, $4.00.

This work brings up-to-date many advances that have been made in the production of biological products; the new methods that have been introduced in the manufacture and standardization of the older products and the new preparations that have been presented. This work makes available in one volume a connected and concise account of our present knowledge of the more important biological products in use.

The New International Clinics, Being Original Contributions; Clinics; and Evaluated Reviews of Current Advances in the Medical Arts by Outstanding Medical Authorities Throughout 9œ5 United States. Edited by George Morris Pierson, M. D. Vol. IV. New Series 2. Philadelphia, Montreal-New York. J. B. Lippincott Company. 1939.

PHYSICIANS IN EXCESS

Continental Europe is presumed to provide all kinds of information as to the practice of medicine and how to manage the medical profession. It comes as a surprise, therefore, to note that in Sofia, the capital of Bulgaria, there are more physicians than are needed This city has a population of 25,000 and 800 doctors. The country districts as usual are a trifle short on medical care. It is incomprehensible that this should be so, but it is, and now the government is arranging to provide one paid physician for every twenty-three miles of territory. It is worth while noting in passing that in Germany also, despite the violent regimentation in force, there is a shortage of physicians not only in the rural districts but in the cities and in the official set-up. It would seem that in no section does the medical situation admit of too much managing.

The picture of anyone suffering by reason of an inability to obtain the services of a physician is always a touching one. The query must naturally arise as to whether it makes any difference just what kind of a physician turns up at this critical moment, or whether it is just sufficient that some kind of a medico is obtained to grace the situation with his inspiring presence. It would appear that in the minds of sociologists there is no difference and if the submerged tenth, or whatever the proportion happens to be, can just have a doctor at their beck and call that is all that is necessary for the perfect picture.

It happens only occasionally that the doctor is any higher than the community in which he happens to live. There are many notable exceptions to this, but it seldom happens that a progressive physician is content to stay in an unprogressive community. The progressive character of the community depends upon factors other than its medical service, although the implication from the various reports and surveys is that the whole prosperity of these backward localities is due to their insufficient medical care. This provides material for unlimited debate.—Philadelphia Weekly Roster.

4% OF NATIONAL INCOME FOR MEDICAL CARE

A little less than 4% of the national income goes to pay for medical care, according to a report on U. S. consumer expenditures just issued by the National Resources Planning Board. In 1935-36, the year studied, approximately $2,200,000,000 was spent for medical care. However, this covered only three-quarters of the total medical bill of the nation; the rest was met by free services supplied by public and private agencies. The total national income of 59.3 billion dollars in 1935-36 was spent as follows: Food, 29%; housing, 16%; household operations, 9%; clothing, 9%; automobiles, 6½%; medical care, 4%; recreation, 3% personal care and tobacco, each about 2%; transportation, 1½%%; education, less than 1%. Approximately 10% was saved, 4% given away to relatives, friends, churches, philanthropies, and only 1½% as income and other personal taxes.

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DEAFNESS

Crowe and Bayloy* present evidence that progressive deafness of middle ear origin begins during childhood and may be prevented if remedial measures are taken.

Chronic partial occlusion of the eustachian tubes by nodules of lymphoid tissue causes retraction of the tympanic membrane, impaired hearing for high tones, and sometimes a total loss of hearing by bone conduction. (These findings indicate that it is necessary to reconsider the diagnostic criteria for differentiating middle and inner ear types of deafness.)

The authors describe the procedure for handling children who present evidences of obstruction of the eustachian tubes. A careful history is taken to uncover the evidences of tubal obstruction. Insidious, slowly progressing deafness, recurring attacks of otitis media, and chronic otorrhea are important facts to be sought in the history.

A careful physical examination, including a nasopharyngoscopic inspection and a tuberculin test are made. Everything possible is done to improve resistance to colds. Healthful habits are instituted. The tonsils, adenoids, and hypertrophied lymphoid tissues on the pharyngeal wall and at the base of tongue are surgically removed. Intensive follow-up treatment with radium and high voltage X-rays is then carried on to prevent regrowth of the lymphatic tissue in the nasopharynx. This phase of the medical supervision is important and continued over a long period of time.

Citing case material covering about 10 years of study, the authors indicate that the hearing of children may be safeguarded, and that children having severe degrees of hearing loss from tubal obstruction may even be cured. After the age of fifteen years the results are far less satisfactory.

If the school health service is to contribute actually to the prevention of deafness, we must not only discover the hard of hearing child and be alert to identify those children who present conditions which are likely to result in deafness, but we must also assume the important responsibility of continued education and follow-up. Too frequently parents and children will neglect the medical supervision which is necessary over a long period of time. The deaf child, the child susceptible to ear and upper respiratory infections, the cardiac child, the diabetic child, and others often require continued and frequent guidance if we are to prevent deviations from the path of health.

*The Prevention of Deafness, S. J. Crowe, M. D., and John W. Bayloy, M. D., J. A. M. A., Feb. 18, 1939.

THE PUBLIC HEALTH SERVICE LEAVES THE TREASURY DEPARTMENT

After nearly 141 years, only 9 years less than the full life of the nation itself as an independent republic under the Constitution, the United States Public Health Service leaves the administrative jurisdiction of the Treasury Department and passes into the Federal Security Agency.

FIVE HUNDRED THOUSAND ARE VICTIMS OF DAILY INJURIES

Washington, April 2.—Ten million accidents serious enough to disable their victims one day or longer occur annually in the United States.

Each day 500,000 persons are unable to work, go to school or pursue their usual activities as the result of injuries caused by accidents resulting from multiple sources, the Public Health Service announced today.

The service disclosed that 7 per cent of the deaths among the 70,000 families canvassed were the result of accidental injury. Accidental deaths were exceeded only by mortalities from disease of the heart, cancer and pneumonia.

It was revealed that sixteen of every 1,000 persons are disabled for a week or longer by injuries each year. The average period of disability experienced by the victims of serious accidents is forty-six days. This is compared with the average duration of disability from all causes, which is fifty-seven days. Automobile accidents average fifty-five days of disability.

Many Are Maimed

Maiming injuries occur most frequently in the course of work, the report states, since 70 per cent. of the lost fingers and 46 per cent. of the loss of other members are attributed to occupational casualties. For impaired members, however, home accidents are of equal importance to industrial mishaps.

The home is far from being the safest place, as it is usually considered. More than 30 per cent. of all accidents occur there. The home injuries result mainly from falls, burns and cuts.

Boys and men are more liable to suffer accidental injury than are girls and women until the age group above 65 years is reached. The situation is then reversed.

The greatest single source of accidental injury is the fall, which is credited with 39 per cent. of all the serious disabling factors. Falls are even a greater menace at present than automobiles, which are responsible for 20 per cent. of the nation's yearly accident toll.

Autos Are Deadly

However, the automobile is responsible for the greatest number of accidental fatalities. Persons injured in an automobile are two and one-half times as likely to die as persons injured by any other means.

The report associates the higher rate of accidents in the homes of the very poor with inadequate housing facilities. Faulty stairways, poor lighting and heating conditions and rickety furniture are all factors which are responsible for the excessive home injuries among the lower third income group.

The National Health Survey is attempting a solution of the nation's ever-increasing accident problem by endeavoring to ascertain the source and circumstances under which serious mishaps occur. In this way they hope to suggest preventive measures for each type of accident.—*San Francisco Examiner.*

A new therapeutic procedure in the treatment of whooping cough—

PERTUSSIS ANTIGEN (Detoxified)
Lederle

IN A SERIES OF OVER A THOUSAND CASES of whooping cough *treated* with this new antigen, JOSLIN and CHRISTENSEN* found the duration of the disease to be reduced two weeks as compared with an untreated control group. Likewise, the incidence of complications in the treated group was less than 1% as contrasted with nearly 20% in the controls.

In a series of several hundred cases in which the antigen was used *as a prophylactic*, a protection rate of over 90% was obtained in the children exposed one to several days. About three-fourths of the children immunized during the incubation period escaped the disease.

"Pertussis Antigen (Detoxified) *Lederle*" usually helps in the treatment of whooping cough when administered early:

- by reducing the incidence of complications;
- by shortening the duration of the attack;
- furthermore, it appears to offer a considerable degree of protection in the prophylaxis of pertussis, even in exposed cases.

DOSAGE:

For curative use: 3 to 5 subcutaneous injections, 1.5 to 2 cc. every other day.

For immunization of direct contacts: 3 subcutaneous injections, 1.5 to 2 cc. every two or three days.

For general prophylactic use—children not directly exposed: 3 subcutaneous injections 2 cc. each at weekly intervals.

PACKAGES:
3 vials—2 cc. each
1 vial — 20 cc.

*Unpublished data — JOSLIN, C. L. and CHRISTENSEN, T. A.



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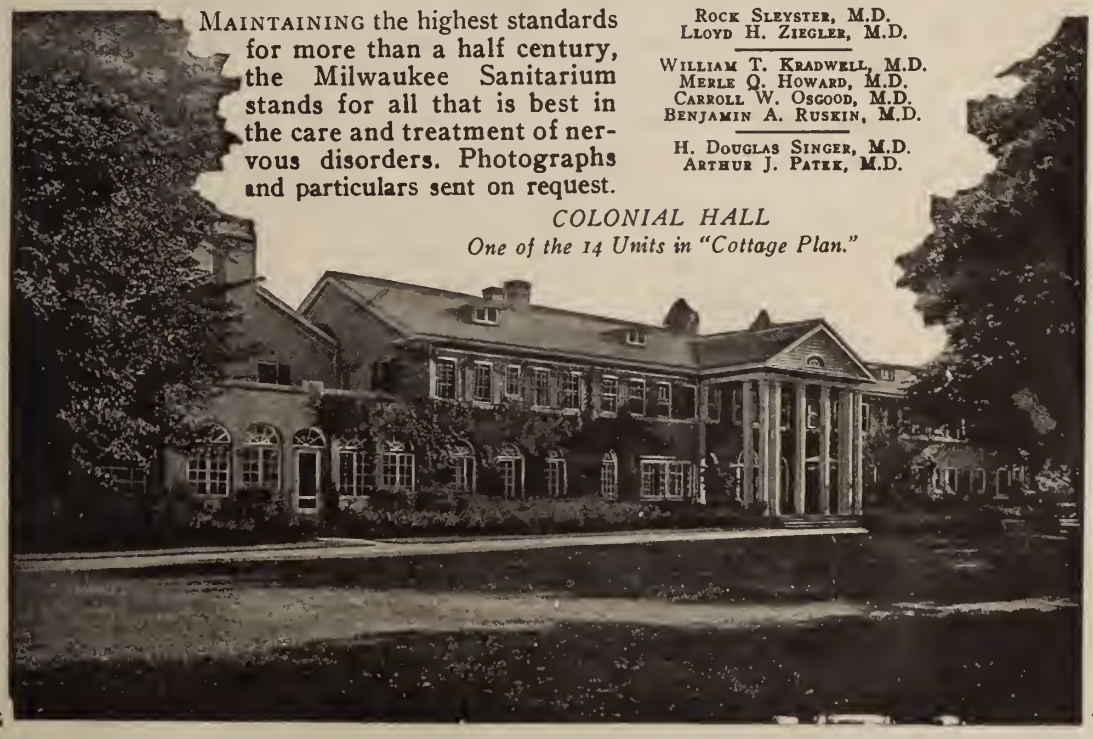
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METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

V. The Determination of Riboflavin

● In 1929, the so-called "water-soluble vitamin B" was considered to be composed of two factors, heat-labile vitamin B and heat-stable vitamin G (American nomenclature). General recognition of the existence of vitamin G stimulated research on methods for its quantitative estimation. As a result, a number of bioassay methods for vitamin G were evolved (1, 2) and widely used to determine the vitamin G values of foods.

By 1937, however, it was evident that the heat stable fraction of the vitamin B complex was not a single entity, but rather a mixture of essential factors, among them the yellow-green fluorescent pigment, riboflavin (3). Hence, another chemical compound has recently attained significance in human nutrition (2, 4). The establishment of specific methods for the determination of riboflavin in foods immediately became of interest to workers in the field of nutrition.

As to methods for estimation of riboflavin, it is commonly accepted that the Bourquin-Sherman bioassay method (5)—originally devised for vitamin G—measures riboflavin rather than any other factor (2). This method provided for depletion of the body stores of young rats by confinement to a specified "vitamin G-free" diet and determination of the growth response of the animals to graded supplementary doses of the material under assay. One Bourquin-Sherman vitamin G unit is now considered equivalent to 2-5 micrograms (1/1000 milligram) of riboflavin, the probable average value being about 3 micrograms.

Attempts have also been made to devise a physico-chemical method for estimation of this factor. The yellow-green fluorescence of riboflavin solutions—reaching its maximum between pH 6.0 and pH 7.0—is one of the distinctive properties of this compound (6). The measurement of the intensity of this fluorescence appears to be a promising method for estimating the riboflavin content of a suitably prepared solution, within certain ranges of riboflavin concentrations. However, many difficulties such as the complete extraction of riboflavin from foods and the removal of interfering materials from the extract must be overcome before fluorometric methods can be applied to the determination of riboflavin in all foods. However, recent reports demonstrate that fluorometric methods are adaptable to the estimation of riboflavin in certain specific foods and that a reasonable correlation may be expected between values determined by fluorometric and bioassay methods (7).

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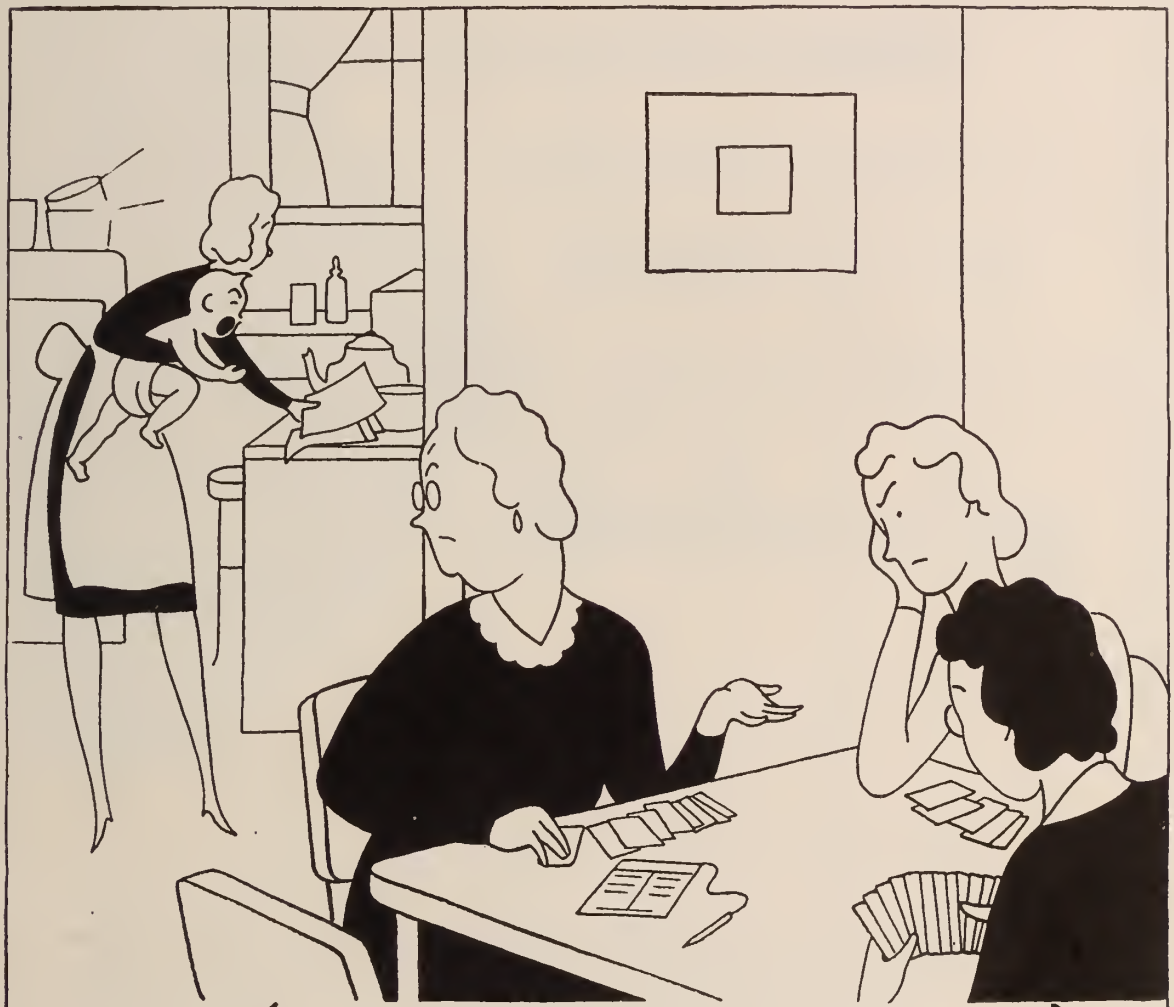
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1932. J. Nutrition 5, 307.
1934. J. Nutrition 8, 449.
1935. J. Am. Diet. Assoc. 11, 343.

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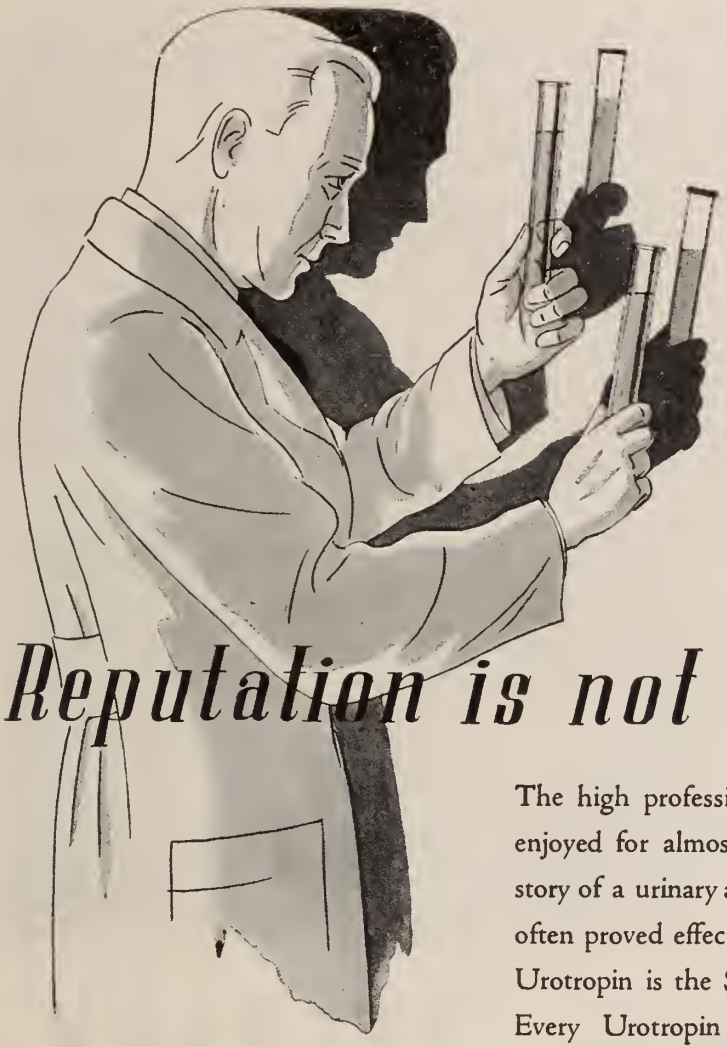
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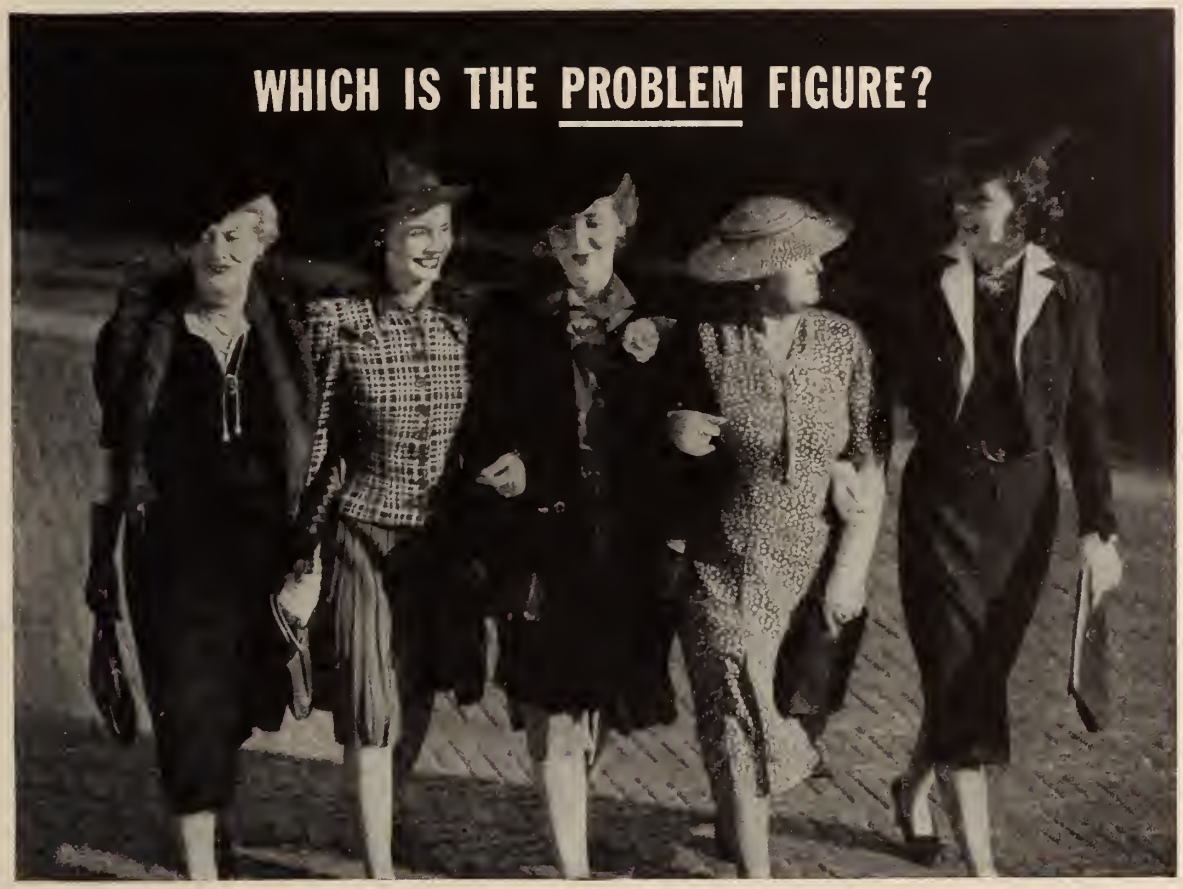
SUGGESTED DOSAGE:

One Hematinic Plastule Plain three times daily
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TWO TYPES:

Hematinic Plastules Plain
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In bottles of 50's and 100's

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A Corsetiere's Tape Measure Alone Can't Tell

● Your own records will show that seven out of ten women have figure problems which affect their well being. Many of them are caused because comfort and anatomical regard are sacrificed in quest of current style objectives. Women who have minor posture defects, pendulous abdomens or pendulous breasts are better served in an anatomically designed garment. This helps to correct their condition and give a pleasing appearance as well, whereas the average so-called style garment is designed to achieve a seasonal silhouette without regard to possible consequences.

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Mucilose with Kasagra combines 55% of Mucilose (the hemicellulose obtained from the Plantago loeflingii) with 4 minims to the teaspoonful of the tonic laxative, Kasagra.

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ILLINOIS MEDICAL JOURNAL

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Editorials

WE HAVE BUT ONE LAMP BY WHICH OUR FEET ARE GUIDED, THAT OF EXPERIENCE

The tax supported medical service advocates claim that the best way to provide adequate medical care is by socialization. Carl Glennis Roberts, M. D., of Chicago, in the December, 1939, issue of *Opportunity Magazine* challenges such propaganda and asks:

"Upon what proof does this belief rest? Surely if we are to exchange a system which, for all of its alleged deficiencies and inadequacies has given us the best health standards of any country in the world, the least we can accept in return is a system which assures equal or better results in every respect.

"Does socialized medicine do this? Our best proof is in the example of those countries which have fallen captive to its lure. Does it excel our results in decreasing loss of working days, conserving health, prolonging life, providing more and better medical care? Germany is where it started, so let us compare the German report for the year of 1937 with that of the United States:

Germany—Sickness cost employer 5% of income. Sickness cost to employee 8.5% of income. Total: 13.5%. Loss of working days, 17%.

United States—Cost to employer and employee 3% of income. Total: 3%. Loss of working days—6%.

Difference of 10%—cost of daministration and red tape.

More important than income is death rate. Let us contrast this rate in comparing Germany, England and the United States for the years 1933 and 1938:

Mortality: 1933:

51 German towns 8%
118 English towns 8.2%
88 American towns 2.3%

United Satees mortality rate for cities and country: 2.9%.

England, January to July, 1938, death rate: 12 per 1,000.

United States, metropolitan industrial death rate: 8 per 1,000.

WHAT THE 1940 CENSUS WILL SHOW

Three health facts will stand out in the 1940 population returns:

First, an increase in the average age of Americans.

Second, fewer young and more old persons.

Third, reversing the trend of a century a sharp decline in the birth rate, a plain warning that the United States is near the end of its population increase.

The returns will show a population of 131,000,000 or 132,000,000. From close to 3,000,000 in 1921, births have declined to about 2,300,000. The number of men more than 65 is increasing rapidly. Twenty-five years hence there will be twice as many past 65 as there are today. Though the United States will show a population gain for the decade of about 9,000,000 there will be 12 per cent. fewer children under ten. Since 1930 enrollment in the first grade of public schools has declined about 100,000 each year.

Analysis of the vast census records on American population reveal not only the present status of our people, but portend future trends of great significance.

The Census records show the transformation of the American people from a 95 per cent. rural ratio to a major urban status. Today, only 24 per cent. of the population is actually supported by the farms, embracing a farm total of approximately 32,000,000 out of over 130,000,000. Census records reveal the migration resulting from the development of the great frontiers; the rise and decline of industries and the regional effects of drought and depression. There are indications that population swings to the cities for industrial employment in times of prosperity and back to the land in times of adversity. The 1940 Census, by including a measure of the extent of migration in a five-year period, will supply better information on this question than has heretofore been available. The Census shows not only how we shift, but how we live, work and die.

The most vital indicator of the future of America is the birth and death record of the Census Bureau. The birth rate which in 1915 exceeded 25 babies per 1,000 population has dropped to 17. Despite a great increase in total population during that time the actual baby crop dropped from over 2,621,000 in 1921 to 2,203,000 in 1937. In the eight years from 1921 to 1928 inclusive, 2,200,000 more babies were born than in the subsequent eight years, ending with 1936.

In 1880 children under five years of age constituted 13.8 per cent. of our population. Fifty years later—1930—they were only 9.3 per cent. In 1930, 17,587,354 families—58.8 per cent. of the total families—had no children under 10 years of age, and 11,593,871—38.8 per cent.—had none under 21.

And to gauge the future of the nation it is important to know where births and deaths are taking place. The states which have a birth rate in excess of 20 are New Mexico, Alabama, Arizona, Georgia, Idaho, Louisiana, Mississippi, North Carolina South Carolina, Utah and West Virginia. The states which have a birth rate of less than 15 are Connecticut, Illinois, Massachusetts, Missouri, New Jersey and New York.

The birth rate in big cities is barely more than sufficient to maintain present population. And the birth rates in rural areas are higher than in cities generally. And more people are dying in the cities than in the country. For instance: In 1937, 52.7 per cent. of the deaths occurred in cities while 47.3 per cent. occurred in rural areas, but 48.4 per cent. of the births occurred in the cities as against 51.6 per cent. in rural areas.

Coincident with the sweeping decline of youth ratio, there has been taking place a reduction of the death rate. In 1900, 17.6 persons out of each 1,000 population died annually. In 1937, this death rate was down to 11.2. It had got as low as 10.7 in 1933.

The combination of the decreased ratio of youth and the prolongation of life is resulting in a constant increase in the average age of people. From a population formerly preponderantly youthful we are emerging into a population of older people. An indication: In 1880, people aged 65 and over constituted 3.4 per cent. of our population and in 1930 these ages constituted 5.5 per cent.

Census records contain convincing evidence of the prolongation of human life. According to the census statistics covering 1929 to 1931, a

white male baby born today has a life expectancy of 59.06 years. According to the figures of 1900 to 1902, such a baby had a life expectancy of 48.23 years. Female white babies born now have a life expectancy of 62.65 years as compared with 51.08 in 1900.

The advance of medical science in the conservation of life has been tremendous. Census death records show that the great human enemies, such as tuberculosis, typhoid, smallpox, measles, scarlet fever, diphtheria, influenza and pneumonia, erysipelas, malaria, bronchitis, diarrhea and enteritis, cirrhosis of the liver, maternity deaths, diseases of infancy and nephritis, are gradually being conquered. Tuberculosis, which used to take 200 lives each year out of 100,000 population, now takes less than 55; typhoid is down from 36 to 2, and influenza and pneumonia combined are down from 200 to 110. Diphtheria is almost whipped—down from 40 to 2. In a little more than 35 years the deaths per 100,000 in these killers show a total net reduction of 542 per 100,000 population, which would mean a saving of 704,600 lives this year that would have been claimed under the 1900 death rate.

But eight other common killers—cancer, cerebral hemorrhage, diseases of the heart, diabetes mellitus, appendicitis, suicide, homicide, automobile accidents—have been increasing their deadliness. Increased fatalities resulting from these eight amount to 195 per 100,000, which would mean an increase mortality this year from these causes of 253,500. *So, between the two groups of killers, there is a net saving of lives this year amounting to* 451,100.

If it were not for the decrease in the national death rate, the deaths this year would have exceeded the births and, without immigration, our population would already have reached its peak. But as it is, the peak may not be reached before another 20 or 30 years and, according to present trends, our peak population at this time should be around 145,000,000. From then on, unless trends change, there will be a gradual decline.

Of interest to Illinoisians is the prospect that the population hub of the nation may shift to Illinois soil. For fifty years the center of population has been in Indiana. Geographers define the center as "The point of intersection of the north and south line which divides the population into two equal parts, harmonized with an east and west line which divides the population into two equal parts.

Some statistical experts say that the center of popualtion is headed south—drawn by strong population factors in Kentucky, Tennessee and other states south. We still maintain that all the evidence point to the new population hub being located in Illinois.

THE ESTABLISHMENT OF A POLITICAL MEDICAL SYSTEM

The fourth decade of the twentieth century has slipped by without socialized medicine having been instituted in this country. What are the present signs? Have we been unduly alarmed by our journals and our leaders? Surely after almost twenty years of warnings we should now be able to discern outlines of any socialized schemes for medical practice. Just as surely as diseases have their incubation periods and prodromes so do political movements have their symptoms. The first of these is the *phase of propaganda*. The introductory phenomena of propaganda are the stating and mis-stating of the needs for medical care. It has been said that "it is not less wrong; and generally it is much more foolish to palter with truth for a good than for a foolish cause. And the pessimistic descriptions of our age, combined wth romantic exaggerations of the happiness of past ages must tend to the setting aside of methods of progress, but which resemble the patent medicines of a charlaton, and while quickly effecting a little good, sow the seeds of widespread and lasting decay."

The chief methods of mis-stating the needs have been to employ partially truthful surveys of the problems of the distribution of medical care. Much has been made of the slightly mythical person who cannot secure medical care. Occasionally reference is made to the "underpaid" physician thereby expressing the foolish idea of competent physicians securing better returns under government service. This idea of course represents an appeal to wishful thinking which is carried to its extreme in many attempts to legislate economic law. For instance, Congress under the guidance of hopeful social agencies carried wishful thinking to a legislative height in the enactment of the National Labor Relations Act and "it presumed that employers, employees and unions would live happily ever after." What

is generally lost sight of is that the length of time between the hopes or aims of an act and its accomplishments of good may be as long as required for the gradual evolution of the aim with very little permissive or enabling legislation. Economic law can not be legislated and neither can *personalized* medical practice. We should countenance no other.

Propaganda must not alone be considered for its material—its sources should be known. Most of us are now well aware that many of the so-called surveys which laid the foundation for recommendations for government participation in medical care were started by funds set up by a few wealthy men. Many of us do not know that in 1921 these very columns described "the vain glory of a few subsidized men and women" who "through the media of corporate foundations backing secretly bureaucracy, paternalism and an impossible, erratic super state" would take us over. And nineteen years have borne out a prediction which may have seemed absurd in 1921. These subsidized social groups have sought to drop political medicine on the United States from a central source.

It is well to note that the propagandists were not persons locally charged with the administration of medical care. Nor are they as a group concerned with the business problems of the country although wealthy individuals sponsored them. Perhaps if these sponsors had paid more attention to the distribution of wealth than of medical care we'd see people better equipped to purchase anything they desired.

Since there are some parallels between the current attacks by reformers on business and on medicine it is of interest to note some advice given business by G. W. Dowrie, Professor of Economics at Stanford University [1]"A system of State capitalism would probably succeed in putting everybody to work"—but "The substitution of a deadly regimentation for individual initiative and free enterprise would inevitably result in a marked lowering of the general state of well-being." A very close paraphrase of these remarks applies exactly to the institution of political or State medicine. To offset the developments of the reform propagandists, medicine, even as business, should "in its public relations—use the power of its voice to inform the people continually on the fake planning that clutters its path."

The phase of propaganda in the symptoms of the onset of political medicine proceeds to the *phase of proposal.* Of the proposals so far offered none has attracted so much attention as that introduced in Congress last year by Senator Wagner. This proposed act represented several of the described features of propagandized reform. It vested controlling power of the care of the sick centrally rather than locally. It sprang from a coterie steeped in notions of the virtue of the social State.

Any proposal must be strictly examined in the light of what it can be expected to accomplish. Any proposal should be compared with attempts in social legislation in other fields. Questions should be asked such as those recently put to [2]"the custodians of National power who undertook in 1933 a new trusteeship. Has this trusteeship been truly in the public interest? Has it brought peace with its Wagner Act, freedom from security frauds by its Securities and Exchange Act, economic freedom with its encouragement of the anti-trust laws, a primed pump with its expenditure of billions and a mobilization of credit resources for the benefit of the makers and creators of jobs?" Certainly stability in current fields of experiment should be gained before a new and undoubtedly expensive program of doubtful benefit is instituted.

The phase of propaganda has been going on for many years; the phase of proposal is now extremely active; is the *phase of establishment* taking place? One of the first symptoms would doubtless be in the minds of the physicians of the country. Are we resigned to the imminence of political medicine? And if such a type of practice should come what may we expect the political considerations to be? The current lack of emphasis on management by capable individuals within federal bureaus is suggestive that a medical bureau or department in a bureau will also suffer from a lack of properly organized civil service administration and from political manipulation. For instance the turn of the next national elections will influence between 300,000 and 400,000 appointive positions in the Federal Government service. In a Federal Medical Bureau what will be the jobs traded for

1. The New York Sun, Saturday, January 6, 1940.

2. "1940—Year of Decision"—The United States News, January 5, 1940.

votes? And how will that influence the health of the low-income groups? While we are thinking about these items we might give our attention to the progress of the Ramspeck Bill in Congress. It proposes to repeal provisions in laws creating emergency agencies thereby doing away with about 250,000 *appointive* positions.

Probably of greater concern to the general public than the political features of the establishment of a medical bureau would be its cost. For the health of the people of this country is not its most vital problem whereas the economic situation is. A review of the opinions of twenty-two leadng economists on the needs of the country for economic recovery reveals no thought of a factor of illness as interfering with a program of improved business. However, Leonard L. Watkins, Professor of Economics, University of Michigan, says [3]"Sonnd recovery seems unlikely as long as organized raids continue on the Federal Treasury. . . ." Certain National health schemes recently proposed envisioned the expenditure of several hundreds of millions of dollars. This smacks of a Treasury "raid" even in a day when a million or two is small change.

If all the hopes, aims and wishful thinking of the advocates of the social State came into existence the expense would still hardly be justified from an economic standpoint. But in no other country in the world have their thoughts come true—no other country has a health record superior to ours even though some have well organized medical service plans. The importance of a high level of economic welfare is being shown in Germany. We believe that not only economic well-being but *personalized* medical care—a close patient-physician relationship—are necessary for general good health.

THE ONE HUNDREDTH ANNIVERSARY MEETING

The Illinois State Medical Society will celebrate its One Hnudredth birthday in 1940, and the Annual Meeting of the Society, to be held in Peoria next May, will feature "A Century of Progress in Medicine." The officers of the Society, officers of the Scientific Sections, Committee on Arrangements and others who assume responsibility for the arranging of the program and other features of the meeting are endeavoring to arrange an outstanding meeting and one which will appeal to the entire membership.

More general meetings will be held this year than have been arranged for previous annual meetings, in an effort to have a program which will especially appeal to the general practitioners.

Several special meetings will be held on Tuesday morning, May 21, then the meeting will be officially opened at 1:00 P. M. and immediately following this short session the sections will all have their programs under way.

A general meeting will be held on Tuesday evening in place of the usual stag entertainment, with four addresses on subjects of general interest to all practitioners. On Wednesday morning another joint meeting of all sections during which the annual orations in Medicine and Surgery will be delivered. The orator in medicine will be Dr. Leonard Rowntree of Philadelphia, while Dr. Frank H. Lahey of Boston will deliver the oration in surgery.

On Wednesday afternoon section meetings will be held, and the annual President's Dinner will be the only event scheduled for that evening. Some interesting features will be scheduled in connection with the President's Dinner in keeping with the "Century of Progress in Medicine."

Thursday morning will be devoted to another all section meeting and an unusually interesting program is being arranged. Deviating from the customary procedure in this Society, there will be a number of guest speakers from other states on the program, and all of them scheduled to appear before joint sessions and to talk on subjects of general interest to all physicians.

The Secretaries' Conference, Veterans' Dinner meeting, and other special dinner meetings will be held on Tuesday evening, May 21, and interesting programs are being prepared for each of these events. The two meetings of the House of Delegates will be held on Tuesday afternoon and Thursday morning, as per the usual arrangement in conformity to the By-laws of the Society.

The scientific and technical exhibits will be displayed in the large new Shrine Mosque, and in this same building all general and joint session programs will be delivered, and most of the major section meetings likewise held here. The

3. The New York Sun, Saturday, January 6, 1940.

committees responsible for the development of the scientific exhibit are arranging an unusually large number of exhibits which will be of general interest to all members and guests at the meeting.

The Hall of Health will be conducted in the large Peoria Armory, and will be open from noon Tuesday the 21st to Saturday evening May 25th. The Century of Progress will be features in these health exhibits for the public. Additional announcements relative to these features of the Annual Meeting will be published in the March ILLINOIS MEDICAL JOURNAL.

Physicians or organizations desirous of participating in the scientific exhibit or Hall of Health, should write to Dr. N. S. Davis, III, Director of Exhibits, 700 North Michigan Avenue, Chicago. The following officers were elected to preside at the joint sessions:

Dr. Frederick Christopher, Chrm. Evanston Hospital, Evanston.

Dr. E. M. Stevenson, Vice Chairman, Bloomington.

Dr. Warren W. Furey, Secretary, Chicago.

The One Hundredth Annual Meeting will have many new and interesting features, and is being arranged to interest especially the men in general practice.

Dr. Arthur L. Sprenger, Peoria, is Chairman of the Committee on Arrangements, and all communications relative to local matters should be sent to him. With the many sub-committees to insure adequate local arrangements, with the cooperation of the Association of Commerce of Peoria, Peoria Medical Society and the host Society, the Peoria Health Department, and many other local organizations, and with the cooperation of the Illinois Departments of Public Health, and Public Welfare, Dental and other allied groups, the Centennial meeting to be held in Peoria on May 21, 22, 23, 1940, should truly be outstanding.

DON'T FORGET YOUR FEDERAL INCOME TAX REPORT

The Revenue Act of 1939 effected no change in the federal income tax laws of particular interest to physicians, as such. Another law, however, the Public Salary Tax Act of 1939, will subject to the federal income tax laws the income derived from personal services rendered by a physician as an officer or employee of a state, political subdivision, or any agency or instrumentality of either. Heretofore such income has been considered nontaxable under the federal income tax laws if received for services rendered in carrying out a governmental function. Furthermore, the federal government consented to the taxation by states or local taxing authorities of compensation received after Dec. 31, 1938, for personal service as an officer or employee of the United States, any territory or possession or political subdivision, the District of Columbia or any agency or instrumentality of any one or more of the foregoing, if such taxation does not discriminate against such officer or employee because of the source of such compensation. This act, in effect, does away with the immunity from federal income taxes heretofore accorded employees of states, their political subdivisions, agencies or instrumentalities and the immunity from state and local taxes of the income received by federal officers or employees.

Every one who is required to make a federal income tax return must do so on or before March 15, unless an extension of time for filing his return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must state fully the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on residents of the United States and on all citizens of the United States regardless of their place of residence is 4 per cent on net income in excess of the exemptions and credits.

WHO MUST FILE RETURNS

1. If gross income was less than $5,000 during 1939, a return must be filed (*a*) by every unmarried person and by every married person not living with her husband or his wife, whose net income was $1,000 or more, and (*b*) by every married person living with her husband or his wife, whose net income was $2,500 or more. If the aggregate net income of husband and wife, living together, was $2,500 or more, each may

*Prepared by the A. M. A. Bureau of Legal Medicine and Legislation.

make a return or the two may unite in a joint return.

2. Returns must be filed by every person whose gross income in 1939 was $5,000 or more, regardless of the amount of his net income and of his marital status. If the aggregate gross income of husband and wife, living together, was $5,000 or more, they must file either a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment, a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain the necessary blank from the local collector of internal revenue.

The following discussion covers only matters relating specifically to physicians. Full information concerning questions of general interest may be obtained from the official return blank and from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 percent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first $3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of $3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of $14,000.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully preserved. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone

service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies and the subscription price deducted. Amounts currently expended for books, furniture, and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, such as has been described, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of a more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation reductions taken year by year over its useful life, as described later.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent. a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent. a year; office furniture, 5 per cent. a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March, 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

In a Treasury Decision, approved Feb. 28, 1934, No. 4422, it was held, among other things, that:

1. The cost to be recovered shall be charged off over the useful life of the property.

2. The reasonableness of any claim for depreciation shall be determined on the conditions known to exist at the end of the period for which the return was made.

3. Where the cost or other basis of the property has been recovered through depreciation or other allowances, no further deduction for depreciation shall be allowed.

4. The burden of proof will rest on the taxpayer to sustain the deduction claimed.

5. The deduction for depreciation in respect to any depreciable property for any taxable year shall be limited to such ratable amount as may reasonably be considered necessary to recover during the remaining life of the property the unrecovered cost or other basis.

Particular attention is called to the last of the foregoing provisions. If, in prior years, rates have been claimed which, if continued, will fully depreciate the cost, less salvage, before the end of its useful life, based on conditions now known, a re-estimate of the remaining useful life should now be made and the portion of the cost that had not been depreciated at the beginning of the year 1939 (for a return for the year 1939) should be spread over this re-estimated life.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though

their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

Automobiles.—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expense; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Contributions to Charitable Organizations.—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the collectors of internal revenue or from other reliable sources. A physician may not, however, deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes.

Social Security Taxes.—The excise taxes imposed on employers by section 804, title VIII, and section 901, Title IX of the Social Security Act, commonly referred to as old age and unemployment benefit taxes, are deductible annually by employers in computing net income for federal income tax purposes. If the taxpayer's return is made on a cash basis, as are the returns of practically all physicians, the taxes are deductible for the year in which they are actually paid. If the return is made on an accrual basis, the taxes are deductible for the year in which they accrue, irrespective of when they are actually paid. Employees, including physicians whose employment brings them within that category, may not deduct the tax imposed on them by section 801, title VIII, of the Social Security Act, generally referred to as the old age benefits tax. If, however, the employer assumes payment of the employee's tax and does not withold the amount of the tax from the employee's wages, the amount of the tax so assumed may be deducted by the employer, not as a tax paid but as an ordinary business expense.

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire or Other Causes.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any

automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

Sales of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

NATIONAL PHYSICIANS' COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

The reasons for the establishment of a National Physicians' for the Extension of Medical Service is because of widespread propaganda in general use which has affected the status of the physician and altered the view point of the attitude of the patient.

The future of American Medicine will be determined by the manner in which the doctors face and respond to this new challenge and new responsibility.

If the ethical and scientific standards are to be maintained, the independence of American Medicine preserved, and the public interest best served, American physicians must:

1. Make possible the providing of medical service to the indigent and those in the low income groups, and insure the most widespread distribution of the most effective methods and equipment in medicine and surgery.

2. Assume the responsibility of countering destructive propaganda by familiarizing the public with the facts in connection with the methods and the achievements of American Medicine.

To meet these needs the

NATIONAL PHYSICIANS' COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE

came into being.

Initially it will advocate:

1. The maintenance of independent private medical practice.

2. The preservation and extension of our independent hospital system.

3. The centralization of all Health Services of Federal and State governments.

4. The determination of health requirements on the basis of locally gathered and locally interpreted data and the utilizing of grants-in-aid only under conditions of locally demonstrated needs.

5. Control and disbursement of public health funds by administrators locally appointed or locally elected.

This committee will, to the fullest possible extent within the abilities and resources, familiarize the general public with its *program and policies, private and public health needs,—the achievements of and the position occupied by American Medicine,—the services rendered by physicians,—how and where these services are available, and will utilize to accomplish these purposes—*

The daily, weekly and trade papers;

Magazines—Radio—Public Meetings, and

The cooperation and services of other agencies or organized groups—which can aid effectively in promoting the objectives sought.

There is considerable evidence that all is not going so smoothly as expected with the plan "Sovietize" American Medicine. The doctors are showing a militant spirit and speaking for themselves in a strenuous way. Free speech is a corner stone of our liberties and the future liberty of the physician certainly rests upon his speaking freely, and forcibly, right now. If the friends of tax-supported medicine find it urgent to flood the country with propaganda advocating socialized medicine, then it is just as urgent for the doctors to wire or write or radio and express their opposition. The side of the doctor from the propaganda standpoint is just as important as the side of these self-appointed "general advisors" and political milkmaids.

TIMELESS TREASURES

"Thanks to books the dead appear to me as though they still lived—everything decays and falls into dust by the force of time; Saturn is never weary of devouring his children and the glory of the world would be buried in oblivion had not God, as a remedy, conferred on mortal man the benefit of books. Books are the masters that instruct us without rods or ferrules, without reprimands or anger, without the solemnity of the gown or the expense of lessons. Go to them, you will not find them asleep; if you err, no scoldings on their part; if you are ignorant, no mocking laughter."—*Richard de Bury, Philobiblon*, 1345.

MEDICAL ECONOMICS

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C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

The fate of the so-called Health Insurance Bill in the present session of Congress continues to be the most interesting and vital economic subject before the medical profession at this time. Temporarily submerged by the myriad of controversial subjects arising as a result of the undeclared wars being waged all over the world, many of which are demanding immediate attention, the proponents of Health Insurance have not abandoned their "pet." Temporarily the attention has been shifted to the erection of hospitals by the federal government in those parts of our nation at present inadequately or completely unsupplied with those facilities. There is little or no opposition to the erection of adequate hospital facilities, where they are actually needed, provided the needs are determined before the buildings are erected and the medical profession of the locality are both consulted and listened to as to the urgency of the need.

It is most interesting to read the statements of the different politicians and forecasters as to the probable fate of Health Insurance Bills in this Congress. Congressman Ralph Church of Illinois, in regard to the question of action on "Socialized Medicine," is quoted as having said: "Yes, it is quite probable that something will come up at this session. I do not know exactly what form it will take, but there is a strong lobby behind this proposal. The advanced New Dealers are anxious to go as far as they can with this matter. If the people back home do not want this type of legislation they should get busy *NOW* and let their Congressmen know in no uncertain terms that this is not wanted."

Mr. Wagner continues to sing the praises of his bill, stating: "The bill is a sound foundation for the development of a national health program, based on the American ideal of equality of opportunity for all the necessities of life." Senator Robert Taft, a potential presidential candidate, who has his ears attuned to the national likes and dislikes, says: "A health program—yes: but the Wagner Bill—no. The bill is complicated. It is costly. It fails to encourage private initiative and leads toward socialized medicine. The doctors feel very strongly, and I think justifiedly, that, while the Wagner Bill does not itself contain specifically a program of socialized medicine, it is proposed by those who favor socialized medicine and is open to the suspicion that it will afford a vehicle through which they may put their state controlled medical care into effect."

Miss Josephine Roche, Chairman of the Interdepartmental Committee to Coordinate Health and Welfare Activities, continues to fight the good fight for reform and states: "Millions of our people cannot under existing conditions pay for the medical care they need. Over 90% of the people have less than $3,000 per year. There is more sickness among wage-earners and those with small incomes than among the well-to-do. Here is a vicious circle, those who need most care can least afford to pay for it. Only the Federal government can break this vicious circle."

The *United States News* of December 26, 1939, had a news article on The Public Health —Plans to Better It. This article is too long to reprint, but it should be carefully read by those interested in the subject. All reports to the contrary, Miss Roche is still head of Interdepartmental Committee, and rumor has it that Federal Security Administrator McNutt has adopted a hands off policy. Paul De Kruif is of the opinion that the President is still for the Wagner Bill, but the cost of operation is so great that there is little probability of Congress enacting the Wagner Bill at this session.

Thus the battle rages. Read all the opinions you can find and still you are in a quandary. The fact that this is a presidential election year and there is a decided split in the ranks of the Democrats is most encouraging to the opponents of any bill modeled after or derived from the Wagner Bill.

Meanwhile health insurance plans, both vol-

untary and compulsory, are running into administrative difficulties all over the world. The Group Health Association, of Washington, D. C., the federal Government Clinic, around which there has been much controversy, still show a deficit. A strong attempt is being made to augment its present membership of 2,338. The New Zealand National Health Program is in difficulties after only seven months and may have to be scrapped. It was passed over the protests of the medical profession and already administrative difficulties have appeared of so serious a nature that the government is attempting to work out a compromise. A similar condition has arisen in British Columbia, where the Health Insurance Act passed in March, 1936, where the medical profession has voted against the plan 622 to 13. As a result, the Premier of the Province has announced the indefinite postponement of the operation of the plan. In Australia another Health Insurance plan has run into administrative difficulty and the future is indefinite.

In Dayton and San Francisco there has developed great difficulty between relief officials and the medical profession. In both instances the medical profession claim that there is too much politics in relief and are not cooperating with the relief officials in a manner satisfactory to either party, not to mention the recipients of said relief. This is, of course, an old story to most of us, but one which shouldn't be lost sight of at this time when a threat is being made to enlarge the scope of free medical care.

The December issue of *The Readers Digest* contains an article by Heil Hunger entitled "Health Under Hitler." No comment is needed. It should be read by every member of the medical profession and used as a reference when talking to the laity, many of whom must have read the article.

On February 11, 1940, The National Conference on Medical Service will be held at the Palmer House in Chicago. This is an enlargement of the old Northwest Regional Conference and the entire program will be given over to a discussion of economic problems of the medical profession. The attendance of a large number of men from Chicago, and Illinois is desirable.

The recently organized National Physicians' Committee has the medical profession guessing. While apparently entirely independent of the American Medical Association and organized for the specific purpose of fighting propaganda destructive to the medical profession, its manner of presentation has excited the curiosity of the medical profession without explaining to them either the need of this organization or the manner in which it was formed. Coupled with its presentation is a request for funds, and this is always a handicap to a new organization. As far as the writer has been able to find out, the organization is worthy of support. It is absolutely non-political and non-profit. While its founders are vigorous workers in the AMA, that organization has nothing whatever to do with the National Physicians' Committee. The separation was purposely made definite and so announced so that in no way would the work and standing of the American Medical Association be jeopardized. There can be no argument over the need of a great amount of medical propaganda on controversial subjects the next few years and this will require the raising and expenditure of large sums of money. Since the AMA could not do such work under their charter, a new organization was necessary.

To the best of the knowledge of the writer, the Illinois State Medical Society has taken no action in regard to this committee and its work. Many prominent and influential members of the Illinois Medical Society are members of the state committee. We feel that the question of joining is an individual affair.

We are including in this column this month an editorial by E. H. Skinner of Kansas City, published in the January issue of the *Kansas City Medical Journal entitled* "Our Priceless Heritage." It should be read by every member of the Illinois Medical Society.

E. S. Hamilton, Chairman.

OUR PRICELESS HERITAGE

Many birthrights of liberty and freedom have been flaunted by the succeeding crises of the depression years. It may be well for each of us to take stock and see if the heritages of tradition that surround and support our professional attitudes are worth the fight that must be made to maintain them.

What are these heritages? Who have provided the personalities that give permanence and stability to abstract items of faith in the traditions of medical service to our fellow-beings? What are the facts and their human factors that have

succeeded within our democracy to build a national health and freedom from disease that has achieved an all-time peak in the vital statistics of any and all nations?

Is it not glorious to lift our heads with a priceless pride and realize that never in the history of man—never in the record of civilization —never in the strife for progress has such a high degree of medical service been rendered to any people?

Is it vainglorious to indicate that this record of professional achievement has been accomplished in spite of organized effort to discourage allegiance and faith in American medicine as it is delivered to the American public today?

When one considers the amount of real money that has been contributed by philanthropy and the amounts appropriated by governmental bureaus and boards just to undermine the confidence of voters in the American Medical Profession—only then can we realize that there must be some unfathomable merit and some values beyond all dispute within the fabric of American Medicine.

YES. There must be some priceless heritage that is bred in the bone and sinew of America's physicians. There must be some unalterable ambition to deliver service. Some tenacity to ideals that cannot be menaced by theories emanating from other shores. Some glorious satisfaction in the daily task of service that cannot be diluted by attack, by argument, by God.

Must there be changes in the means and the methods of delivering such priceless service to a people? The answer is, yes. Methods of transporting, of merchandising, of advertising change with the increasing knowledge and ambitions of mankind. All these factors in the distribution of civilization change in their mechanical expression and appearance. But the fundamentals do not change. The fundamentals are such items as life, food, shelter, comfort, happiness and freedom of thought. Freedom to grow in professional activity and usefulness. Freedom to deliver the products of such activity to a faithful following are elements in the priceless heritage that must be maintained in spite of any and all political or social maneuvers at this or any other critical period in American politics. E. H. S.

Kansas City Medical Journal.

HISTORICAL PICTURE GALLERY AT CENTENNIAL MEETING

It is fitting that in connection with the Centennial Meeting of the Illinois State Medical Society there should be a section devoted to a collection of pictures of pioneer physicians in Illinois.

Dr. Carl Black of Jacksonville has a very fine collection of pictures of pioneer leaders in medicine of the state which he has offered to the Illinois State Medical Society to be kept in the archives.

Doctors of the state are asked to send to Dr. Harold M. Camp, Secretary, Monmouth, pictures of the Fifty Year club members of their counties together with interesting short stories about each one. They are also asked to send him cuts or photographs and interesting information about the pioneer physicians of their counties which may be kept in the archives of the Society to augment those already collected by Dr. Carl Black.

THE PROBLEMS OF HOSPITAL MANAGEMENT

In the February 1940 issue of "NATION'S BUSINESS," Lowell Brentano says the problems of hospital management would have puzzled Solomon and the difficulties have tired Job.

The article is both interesting and intensively illuminating from first to last. Economic problems, political interference business men as managers, medical superintendents, lay abuses in general in tax supported hospitals, the better managed privately owned institutions, nursing schools, diet, special problems are all treated in minute detail. Read the article in the original set up in NATION'S BUSINESS.

THE CENTENNIAL CUP

Dr. James H. Hutton, President of the Illinois State Medical Society will donate a suitable golf trophy to be known as the Centennial Cup, as it will first be presented to the holder of the best golf score in connection with the One-Hundredth Anniversary Meeting of the Illinois State Medical Society to be held in Peoria May 21, 22, 23, 1940.

The winner of the cup will be entitled to retain it until the next annual meeting when it will be necessary for him to defend his crown.

and either win it again or turn it over to the holder of the low score at the annual meeting in 1941. In this way, the Centennial Cup shall be returned and played for at each succeeding annual meeting.

An announcement relative to the golf matches to be played on Tuesday morning, May 21, 1940, in Peoria, and the rules relative to the winning of this trophy will appear in the March Illinois Medical Journal, as well as in the same official publication in April and May, so that all medical golfers of Illinois will be thoroughly informed on the subject.

Arthur Sprenger, M. D.,
General Chairman.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

County News

Sangamon County members were entertained at an elaborate and novel Yuletide Tea, Dec. 11th in the home of Mrs. D. H. Trumpe, Springfield, Ill. The president, Mrs. D. M. Sirca presided during the business session. A Round Table discussion concerning Socialized Medicine was presented by Mesdames: H. Otten, O. E. Ehrhardt, A. Bass, G. R. Irwin, W. J. Morginson, D. M. Sirca, H. H. Southwick, W. P. Levis, R. S. Campbell, H. B. Hinkel and C. S. Mayes.

Mrs. S. R. Magill and Mrs. M. Salzman presided at the urns.

Adams County—Dr. Arthur Bitter addressed the auxiliary members at their November meeting on the subject, "Recent Advances in Surgical Treatment and Operations." Their special objective for the year is to cooperate with the county nurse in arranging an educational program for the laity. This meeting was held at the home of the president; Mrs. Walter Whitaker, Quincy, Ill.

The December meeting was held at the home of Mrs. Walter Stevenson, Quincy, Ill. Hygeia and Medical News were the topics of discussion.

Vermilion County—Following a dinner at the Danville Country Club the auxiliary met at the home of Dr. and Mrs. H. F. Hooker on Dec. 5th. A short business meeting, of which the reading of the By-Laws was the main item on the agenda, preceded a festive Christmas party. Arrangements of the evening were in the hands of the president, Mrs. J. H. Williamson and her committee; Chairman, Mrs. I. J. Scott and Mesdames. H. F. Hooker, H. English, Jean Moore and R. Clements.

Will-Grundy County—The president, Mrs. V. J. Cohenour called the meeting to order at the home of Mrs. D. W. Killinger, Joliet, Ill., on Dec. 11th, 1939. The speaker of the evening was Dr. Melvin F. Blaurock, Psychiatrist at the Institute of Juvenile Research, who gave an illustrated lecture on, "A New Approach of the Problems of Juvenile Delinquency."

Members donated gifts to the Crippled Children's Clinic. Mrs. Geo. Woodruff, 1st vice president, called attention to the Radio Programs sponsored by the Medical Society.

St. Clair County—The Woman's Auxiliary to the St. Clair County Medical Society were entertained at a Tea, Thursday, Nov. 16th in the home of Mrs. I. L. Foulin, East St. Louis, Ill. Mrs. C. C. Kane presided, Mrs. C. C. Winning, State President was the guest of honor and Mrs. R. M. Hill, the guest speaker, gave a travel talk. Mrs. E. C. Spitz and Mrs. T. I. Stines were in charge of the arrangements and were assisted by mesdames Foulon, E. McQuillan, R. Bosworth, J. Cordonnier, W. J. Crotty, W. L. Hanson, A. B. McQuillan and W. Stewart.

Mrs. C. W. Stuart,
State Press and Publicity Chairman.

ANNOUNCEMENT OF RESEARCH FELLOWSHIPS IN MEDICINE AND DENTISTRY BY THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS

The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of Medicine and Dentistry in Chicago at a stipend of $1,200 per year (calendar year with one month's vacation). Fellows are eligible for re-appointment in competition with the new applicants.

Candidates for these fellowships must have completed a training of not less than eight years beyond high school graduation. This training may have been acquired in any one of the following ways, or the equivalent thereof:

1. Work leading to the B. S. and M. D. degrees (in some instances the candidates would have the M. S. degree, or an additional year or two of hospital training beyond the interne year).
2. Work leading to the B. S., M. S. and D. D. S. degrees.
3. Work leading to the B. S. or B. A. degree in a four-year collegiate course and to the D. D. S. degree.
4. Work leading to the B. S., D. D. S. and M. D. degrees.

Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former science teachers as references. March 1 is the dead line for acceptance of applications. Announcement of the fellowship awards will be made April 1, becoming effective September 1.

Formal application blanks may be secured from the Secretary of the Committee on Graduate Work in Medicine and Dentistry, 1853 W. Polk Street, Chicago.

ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the

best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the anual meeting of the Association, which will be held at Rochester, Minnesota, on April 15th, 16th and 17th, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewriten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than March 15th.

The Committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays. Dr. T. L. Althausen of the University of California received the Award for the year 1939 in recognition of his essay entitled "A Study of the Influence of the Thyroid Gland on the Digestive Tract."

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

ANNUAL MILITARY MEDICO-DENTAL TRAINING COURSE AT CHICAGO

The Third Annual Military Medico-Dental Training Course at Chicago for Medical Department Reserve officers will be held by the Sixth Corps Area during the period March 31 to April 13, 1940, according to an announcement made by Lt. Gen. Stanley H. Ford, commanding the Sixth Corps Area.

This course, which will be conducted under the direction of the Corps Area Surgeon, Col. Paul W. Gibson, Medical Corps, with the cooperation of the Medical and Dental schools of the University of Illinois, University of Chicago, Loyola University, and Northwestern University, is designed to increase the military and professional proficiency of Reserve officers of the Medical, Dental, Veterinary and Medical Administrative Corps. The morning hours will be devoted to professional work in the schools, hospitals and clinics connected with the participating universities. The afternoon and special evening sessions will be devoted to problems with the operation and functioning of the medical service in war. The military courses for the current year will be especially concerned with problems of mobilization as they affect the Medical Department of the Army.

Previous courses of this type, conducted in Chicago in 1938 and 1939, met with a most enthusiastic response on the part of those individuals participating in the instruction. The 1939 course was attended by over 100 officers of the Medical Department Reserve Corps, representing 28 states from Maine to California, who gave their time and bore all expenses connected with their attendance as a personal contribution to national defense.

U. S. Post Office Building, Chicago, Ill. Phone: Wabash 9207, Extension 388.

SOUTH SIDE MEDICAL ASSEMBLY OF CHICAGO

The South Side Medical Assembly will hold its annual mid-winter clinical meeting on Wednesday, February 14, 1940. All members of the medical profession are cordially invited to attend all surgical clinics and all lectures. There will be no registration fee.

Program

Morning—Surgical Clinics—Jackson Park Hospital, South Shore Hospital—8:00-11:00 A. M.

Luncheon—Shoreland Hotel—12:00 noon.

Afternoon — Symposiums — Shoreland Hotel — 2:00-5:30 P. M.

MODERN TREATMENT OF UROLOGICAL DISEASES

Gonorrhea in Men—Dr. Patrick McNulty.
Gonorrhea in Women—Dr. Louis D. Smith.
Pyelitis—Adults—Dr. Harry Culver.
Pyelitis—Children—Dr. H. W. Elghammer.

PNEUMONIA—TREATMENT

Clinical—Dr. LeRoy P. Sloan.
Serum—Dr. H. A. Lindberg.
Complications—Dr. Willard Van Hazel.

OBSTETRICS

The Causes and Treatment of Spontaneous Abortion—Dr. Ralph A. Reis.

Diagnosis of Ectopic Pregnancy—Dr. James Bloomfield.

SULPHANILAMIDE AND COMPOUNDS

Reactions and Untoward Effects—Dr. Fred Stenn.

Clinical Uses of Sulphanilamide and Related Compounds in Acute Infectious Diseases—Dr. Archibald Hoyne.

FRACTURES

Upper Extremities—Dr. Frank G. Murphy.
Lower Extremities—Dr. Will Lyon.
Spine—Dr. William Cubbins.

CANCER

The Principles of Radiotherapy in Cancer—Dr. Erich Uhlmann.

Carcinoma of the Stomach—Dr. Arrie Bamberger.
Carcinoma of the Cervix—Dr. Irving F. Stein.
Carcinoma of the Breast—Dr. Arkell Vaughn.
Carcinoma of the Skin—Dr. Herbert Rattner.
Carcinoma of the Rectum—Dr. Charles Drueck.

CARDIAC DISEASES

Coronary Disease—Dr. Henry Barancik.

Hypertension—Dr. George Scupham.

Cardiac Irregularities with Electrocardiographic Interpretations—Dr. Chauncey Maher.

HORMONES

In the Menopause—Dr. Andrew C. Ivy.

In Uterine Bleeding—Dr. John I. Brewer.

In Obesity—Dr. Robert Keeton.

In Certain Urological Diseases—Dr. Herbert Landes.

Dinner—Shoreland Hotel—6:30 P. M.

Evening—Lecture—9:00 P. M.

THE POLYPOIDS OF THE INTESTINES:

Their incidence, relation to carcinoma, and diagnosis. —Dr. J. A. Bargen, Dr. Harry M. Weber, Mayo Clinic, Rochester, Minn.

Commercial Exhibits.

Scientific Exhibits.

Any information regarding this meeting may be obtained by writing to Dr. Casper M. Epstein, General Chairman, 25 East Washington Street, Chicago.

JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES AND THE AMERICAN MEDICAL ASSOCIATION

SYMPOSIUM ON HOW CAN EDUCATION IMPROVE THE NATION'S HEALTH

An open meeting of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, to which all those in attendance at meetings of the American Association of School Administrators are invited.

Time—Wednesday, February 28, 2:00 P. M.

Place—Auditorium of Bishop Tuttle Memorial Hall, St. Louis.

Presiding—Frank Cody, Superintendent of Schools, Detroit, Michigan, and Charles C. Wilson, M.D., Chairman, Joint Committee on Health Problems in Education of the N.E.A. and A.M.A.

Speakers:

1. Viewpoint of the Educational Policies Commission —Superintendent Alexander J. Stoddard, Philadelphia, Pa.

2. What the Private Physician Expects the Schools to Teach—Dr. W. W. Bauer, Director, Bureau of Health Education, American Medical Association.

3. The Contribution of Schools to Individual and Public Health—Dr. Walter H. Brown, Stanford University.

4. Administrative Problems and Procedures in Health Education—Dr. John W. Studebaker, United States Commissioner of Education.

Correspondence

THE ROLE OF STATE MEDICAL JOURNALS IN ORGANIZED MEDICINE*

SAMUEL J. KOPETZKY, M. D.
Editor, New York Medical Week

I know of no peculiar attributes or personal experiences which entitle me to talk to you—my colleagues—with great authority on the subject to which I am called on to respond. I must therefore assume that it is due to my maturity and the experience I have gained in more than eighteen years in the editorship of the *New York Medical Week*. The sole revenge that maturity can take on the rest of you—all editors and secretaries of medical societies—is to preach at you. I have been the victim of innumerable postprandial addresses; I should have mercy in my heart. The after-dinner speech is an American vice, which surely ought not to be unduly encouraged.

However, we are met on a suitable occasion. I shall mix mercy with justice and, if possible, add what I can of wisdom. I shall attempt to be reasonably brief.

We are all interested in state medical journals; we are representatives of the editorial group and as such are presumed effectively to function as editors.

What is an editor? One who edits; one who oversees the selection, preparation and the arrangement of material for publication; one who prepares for use or publication by reviewing, compiling, collecting and correcting; one who has been charged with responsibility of a department of a newspaper or publication; one who writes editorials. Here tonight we are less concerned with these routine duties—we take them in our stride and either competently or indifferently "carry on."

What constitutes an editorial? This is an article in a journal or publication presumably written by the editor or his subordinates and published as an official argument or expression of opinion. It is on this aspect of editorship that I want to concentrate your thoughts and evoke your reactions. The success of a journal or publication is not based so much on its informative articles—although they, too. are im-

*Read before the Dinner Meeting of Editors of State Medical Journals at the Annual Conference of Secretaries of Constituent State Medical Associations, Chicago, Nov. 17, 1939. Jour. A. M. A. Jan. 20, 1940.

portant—as it is on the editorial expression of opinion. The articles are of use to the medical profession by reason of their novelty, their ingenuity or their report of completed research, as well as because of the interest which recorded laboratory data and clinical bedside observations hold for the average run of the medical journal reading public. But only that medical publication reaches distinction, attains prestige and wields influence whose editorial pages make it a journal of opinion. Where you find a great medical journal of opinion, there you invariably find that the printed page reaches the light through the shadows cast on it by a competent editor. An editor is as great as his ability to bring to his readers those facts and opinions which they had but were unable clearly to express. In presenting to them their thoughts anew an editor is great if he can bring them back to his reader in an angle which will cause him to fall into line with the policies of the publication. When done with skill, this may frequently cause the reader to do "an about face."

Among us who are editors of journals, in the interlocking chain of constituent bodies of this great American Medical Association, the editorial message naturally must be based on adopted policy of the organizations we serve. The editor must be anonymous. If his editorial is not unsigned and anonymous, it becomes the opinion only of the one who signed it and, when quoted, it is quoted as his opinion. It is a fundamental formula in democratically controlled and run organizations that the association—the aggregate of its members—and their voice are more important and of higher value than that of any one officer or individual within the organization. So, too, with our publications—the journal itself is greater than any of its editors, and it—the journal—must express itself and it must not express or enhance the editorial writer. If perchance what the editorial page says is good, rings true and carries a potent message, then the journal should be credited, and the journal is quoted and attains prestige.

A real editor—one who knows, lives and feels the worth of his job—rejoices in the glorious anonymity which good editorial writing implies. An editor is presumed to know thoroughly the topic on which he writes. So comprehensive should be his grasp that he should be able to deliver his message in a few pungent paragraphs. It is a truism that the better the mastery of any topic, the less will be the number of words necessary to tell its story. Thus the editorial becomes distinguished and differentiated from an article written on the same topic. Reiteration is the essence of teaching. Hence it is within the realm of good editorship to repeat in different form-patterns of words the same message over and over again. Truths held sacred, traditions hallowed by time and usage, and policy which is being stressed—these lose nothing in being retold and reemphasized. Every truth and every policy has many facets. One aspect and one elemental factor should be the backbone of each repetition of the editorial comment. As an example in point: Recently the President-Elect, Dr. Nathan B. Van Etten, in his address before the Pittsburgh Academy of Medicine, said, in speaking on The American Way, "The best program for medicine should be the product of the best minds of the American people. I propose that it be written by physicians and when approved by organized medicine that it be submitted to the Congress. I believe that we should try to find an American way—built on the sound foundations of American experience." This we, in New York, will put on our masthead and keep it there during succeeding issues. Editorially we shall reiterate the message this masthead contains, in our endeavor to make it reach the value of a household word.

An editor must be entirely untrammeled and free to express himself. This freedom should range far and wide but not extend beyond the framework of adopted policy. Intramural groups and political blocs must never be favored, one above the other. They must all be tolerated. All must have the editor's sympathetic ear, but no one must control his potent pen. His office must never be used as an intramural stepping stone for the almost unavoidable political groupings and ambitious aspirations of one sector of the membership over that of another, since the whole membership is actually the editor's collective employer. He serves all of them best when he remains an observer, somewhat aloof, intensely sympathetic and yet always beyond intramural politics. Policies are greater than people, and problems always outweigh parties.

Happy indeed is the editor of a state journal who successfully attains such a position among

his fellow members. He must beware lest he be lured by the siren voice of intramural pressure groups who have a vested intellectual and evangelistic interest in some form of public health education propaganda. I am referring to very worthy groups among us, as for example groups interested in the blind, in the deafened and in the control of cancer and of tuberculosis. Such groups send to the public their own particular messages. The editor of our state journal, having won the confidence of his readers, serves them as a guide and must stand between the strenuous special pleaders from these groups and the general run of the profession. In no case should the editor become one of the special pleaders.

The editor must defend traditional policies of the profession against the general public, which often clamors for hasty and unwise change. The editor must know that there are always those who delight in tagging themselves with the label of "progressive" because of an inherent restless desire to bring about change. It remains to be seen whether or not the change is really a progression. At the same time the editorial must be so employed that it must lead the profession itself away from its inbred aversion to any change. The editor must be a courageous leader, and editorially our state journals must stress an appreciation of new situations and new methods to meet them. The age we live in is one of fast movement. The editor must sense the trends of the time in which he is living and must present the trends of his day so that our readers, first the medical profession and secondly the public it serves, will appreciate the changes taking place about us and be prepared mentally by an intelligent awareness of the current situation and thus be able to build new methods and evolve new technics to meet the changing trends of the day. All this must be within the framework of sound proposals and adopted policies.

The end to be achieved by the medical editor goes further than merely to educate both public and profession for cooperation on accepted policies only. He must prepare groundwork, pave new highways, light up darkened avenues of thought for the appreciation of needs for change in policy and in the development of policy. He must do this even though some of these changes are generally felt to be unpopular with the profession at the given moment.

The medical editor should avoid the use of generalities to help him win his fights. Facts and figures are always the best arguments and the editor himself should never be fooled by generalities and slogans. Slogans are the verbal anesthetics which lull intelligent apprehension of factual data into discards. Most slogans are actually trite phrases framed to nullify the necessity for thinking. They are put forward in the effort to have the casual reader substitute them for conclusions arrived at by deductive reasoning. The editor himself must scrupulously avoid employing slogans. If worthy of the editorial pen he wields his readers have a right to expect better things than that from him. The medical editor naturally must be a student of medical affairs. His studies should be almost wholly objective; he should carefully examine every proposal no matter how fallacious or fantastic it may seem. There may be some germ of good in it somewhere, and if such is found, that little good, no matter how small, should be conserved for incorporation in editorial policy. Our constant effort is to bring comprehension of better methods and technics to the profession so that the public welfare is better served.

The editor is the paramount factor in bringing the general public and the medical profession into close copartnership in the endeavor to maintain high standards of medical practice and a high level of public health. Organized medicine needs no subterfuge in exchanging views with the public or in telling the public its stand on current moot questions. The public, represented by its general newspapers and government agencies concerned with public health, is bound to listen to organized medicine speaking in the name of its 115,000 physicians, through *The Journal of the American Medical Association* and our state journals. If we as editors thoroughly understand our jobs and conscientiously perform our duties, mutual confidence will soon become the established order. Organized medicine can speak publicly through our columns in a voice that will be heard and heeded. Organized medicine needs no camouflaged pressure group to lead its fights toward better medicine and higher grades of medical care or even to popularize the development of its technics for delivering medical care to the indigent and the near indigent, who are separated from receiving such care by financial barriers. Organized medicine, free and

unafraid and "in the open," can advocate its own considered judgments on such questions.

But organized medicine must clearly define its medical policy. No body of men, however expert as publicists, can sell "nebulae." We may be told that a nebula consists of an aggregation of exceedingly bright stars, but it takes an expert astronomer and a strong telescope to see even one. You cannot beat a horse with no horse. Our national health policy must be stated plainly; our goal must be set so clearly that all who run may read. It must be broad enough to cover the general medical needs of the whole country and flexible enough to fit every conceivable local situation. This, of course, is in the hands of the policy forming groups in our organizations, and I am sure that they are endeavoring to complete their designated tasks.

The program handed us this morning, the result of the action yesterday of the Board of Trustees, is a step in this direction. I look on it as a fine beginning, the outline of a basic formula for a national health policy which we can back, and which the leadership of the American Medical Association will develop further. I trust to see an endeavor to translate it into enabling legislation so that our states and our state organizations can act under it and make it effective. We as editors, however, definitely need this outlined policy as the framework within which lies our field of endeavor. Our efforts henceforth should be to popularize it and let everyone know our progressive stand.

There should be a paralleling activity on the part of all editors of state medical journals. I am not implying that the editorial impetus along a given line shall come from a central source. But have we not all exactly similar aims? Are not the goals of our endeavors the same? This is true whether we are editors of the journal in Maine or in California, Texas or Illinois. I would that it were possible for each of us to have a preview of what our confrères and colleagues intend to publish, so that each of us might be able to parallel the other. Progress most rapidly follows an intelligent objective discussion and differences of opinion, honestly held but dispassionately expressed. Among us every proposition is debatable within the realm of good taste and the necessary observances of the decencies.

Knowing the policies adopted by organized medicine to meet the changing needs of our times and having foreknowledge of the thoughts of our editorial colleagues in the constituent journals, I feel that we shall be better able to serve organized medicine and more properly fill the role which it is intended that we shall play in the integration of our joint editorial policies; namely, to express the official opinion of organized medicine. All this to the end that American Medicine shall better serve our people.

DISCUSSION

Chairman Drake: This fine address brings up a number of questions. I think the question of editorials is one of the most important we have. To me it is about the hardest part of my work. It is obviously impossible for the average editor to write scientific articles on every specialty. I myself call on individuals who I think are particularly prepared to write on a certain subject. We have never used the policy of buying editorials.

Dr. Frank H. Jackson: The government has used a vast amount of propaganda, both in the press and over the radio, directed against not only the American Medical Association and state medical associations but also men officially connected with them. They picked them out and designated them with smearing tactics. That is decidedly unfair. There are very few people in the United States, comparatively speaking, who read medical journals. We have to transmit what we have learned and heard today to our various state constituents. I want that to get before the people in my state, the public of Maine. I want the man who votes, the man who thinks, who pays the taxes, to know what this Association stands for, that we are not obstructionists and that we are willing to help, no matter what the politician says. Doctor, how are we going to get a liaison? What are we going to do about this? I think it important that we work this out among ourselves.

Dr. Samuel J. Kopetzky, New York: We write an editorial in the state of New York for the state journal. The powers that be in the editorial office and in the council of the state society decide that it is good and accept it. If it has a message which, in their considered judgment, should go further than among the circle of medical men they strike off a release and it is sent to the editors of the big city papers. It is sent around to a list that is kept in the state society's public relations office; thus, it gets out. When the medical profession shows an unbroken rank, send and carry your message to the public. We do it frankly. We frankly label it and there has been neither criticism nor repercussion. We do not sneak it out camouflaged. It comes out in the open frankly, with a heading from this department of our state medical society. In that way, by a continuous effort, we also feel we speak to the public.

Dr. Jackson: You mentioned the large dailies. Those help, of course. What have you done about the small country newspaper that reaches thousands and thousands of people?

Dr. Kopetzky: They are on the mailing list in our state.

Dr. Jackson: What is the reception as a general rule?

Dr. Kopetzky: Good, because it is frank and open. There is no subterfuge propaganda. It is the message of the state society.

Dr. Jackson: Have you yourself seen these editorial fellows and know them, so they can come back and talk to you?

Dr. Kopetzky: I am out of it entirely. I never talk to a newspaper man or know an editor unless I happen to know him outside the field of my work. Anybody who talks to him talks to the official representative of the state society of New York and not to the editor. The editor is finished when he sends in his article, which is to be published anonymously. If it is adopted and accepted, it is the official voice of the society. I never talk to him personally as editor. I never tried to, for fear I might overtalk myself.

Chairman Drake: Any suggestion for the editors for cooperation with the state secretaries? I know that in our state we send out newspaper releases continuously. I don't know whether they ever use any of the editorials in the medical journal or not. It is a good idea.

Dr. E. M. Shanklin, Indiana: Relative to the contact with the lay public throughout Indiana—speaking in an editor sense—we depend entirely on our publicity committee. It sends out 382 releases every week. They go to the newspapers all over the state. They are published and are read.

Dr. Morris Fishbein, Chicago: I have written many editorials in my time, including editorials not only for the Journal of the American Medical Association but also for a considerable number of other publications. Any editorial, to reach the people and to animate them to action, which is the purpose of an editorial, must have fire, must have "go," must have life. Many editorials in medical journals do not have life, do not have fire. You cannot put fire in an editorial by using what used to be called "namby-pamby" words. You must use words that have fire. I think of the fellow who was brought into court by an old woman. He was working with a wire crew back of her house; the fellow on top who was soldering the wire managed to drop a little hot lead, which went down the back of the neck of the boy below, concerning which he made some enthusiastic remarks. She haled him into court and said he had used language such as she had never heard before.

The judge said, "Just what did you say?"

He said, "When that hot lead went down my back I looked up and said 'You oughtn't to do that, Alfred!' "

Every once in a while you must speak strongly. Some people will resent what you have written. They will say "It was not in good taste. He should not have been so strong; it hurt." It was intended to hurt. It was intended to get results; the fact that there was remonstrance shows that it was effective. There have been innumerable books and articles written on the construction of editorials. There is a standard form for an editorial, particularly a scientific editorial. Begin by stating the question. Next discuss the evidence, that is, the data to which Dr. Kopetzky refers. Then draw the conclusion. I believe the *New York State Journal of Medicine* is one of the best journals of medicine published by any of the states. The public relations job which New York is doing now is an excellent public relations job. Some of the other states are also doing excellent public relations jobs. The extent of a public relations job depends entirely on the amount of money you have to spend. With $250,000 a year you can do a better public relations job than you can do with $3,000 a year. Not all of the states can spend on public relations jobs what New York spends. The American Medical Association cannot spend on a public relations job what the United States government can spend on that kind of a job. Nobody can spend on a public relations job what the United States government has spent and is spending on its own public relations. I do not read every editorial in all of the state medical journals, but I read many of them. I go through all of the state medical journals every month as they come out. The improvement that has taken place in state medical journals in the last twenty years is so tremendous that it is almost inconceivable to any one who has not watched the gradual evolution. As to the throw-away medical journals, they should disappear entirely from the medical scene. They represent a cancer in the field of medical publications. The entire medical profession has a responsibility in relationship to these publications. What they print in general is vicious in that they oppose organized action by stimulating discontent. What they do in the way of fostering advertising that is unscientific, in many instances, is vicious if not fraudulent. These magazines appeal to the lowest instincts of their readers. They dish out the kind of material your own state journals would not and could not publish. A periodical which copyrights its material can protect itself against the plagiarism that is involved in lengthy quotations in any other publication. Where they take a few words from an article and rewrite them in their own language there is usually not violation of copyright in my opinion.

Dr. W. Edwin Bird, Delaware: Some years ago, when we were having our journal printed by the largest printer in Wilmington, we got only a moderate amount of quotations of our editorial page. This firm finally failed. When we cast around for another printer, we went to the Star Publishing Company, which prints the Sunday *Star,* the only Sunday newspaper in Delaware. Since that time, practically every editorial that had any local application at all has been reprinted in full.

Dr. Edgar A. Hines, South Carolina: I want to ask about this little word "we" in editorials, when Dr. Kopetzky urged anonymity. Sometimes I don't put it in an editorial at all for a long time and then, by force of habit, I find the little word creeping in. Perhaps I will get General Taylor's journal from Texas and find a "we" in there. I can imagine Holman Taylor, as well as I have known him for twenty-five or thirty years, prancing up and down his editorial offices and stressing this "we" over and over again to several stenographers. But my impression is that the "we" doesn't appear in the editorials of the American Medical Association.

Dr. Fishbein: The style book of the American Medical Association press discourages the use of the word "we" unless the persons represented by "we" are suitably identified. In all scientific writing, identification of the individual is important. When you are discussing editorially the policies of your state medical association and you say "In the Georgia State Medical Association we have recently adopted the policy," that use of the word "we" would be correct because the antecedent's identity is what is meant by the word "we," but suppose you begin an editorial by saying "We oppose all of the actions recently taken by the council of the New York State Medical Society," who is that "we"? That "we" is not identified. That "we" is presumably the writer, possibly the editor of the journal. In other words, the only proper use of the word "we" is when the persons included in this personal pronoun are in the mind of the reader. You will find a long discussion of the various uses of the word "we" in most of the different style books that have been published by presses throughout the country. I would suggest to most editors that you send for the style book of the New York *Times* or of the Chicago *Daily News*, or of the University of Chicago press.

Dr. A. T. McCormack, Kentucky: The late Henry Watterson, who was an authority on editorial writing, said it was all right to say "we" if you were twins or had a tapeworm, if you would put a star and make a statement of the fact at the bottom of the column.

Dr. Kopetzky: I don't want to monopolize the discussion, but I think Dr. Fishbein hit the nail absolutely on the head. There is another angle I just want to add. "We" is used in an editorial whenever the journal speaks in the name of the organization. Editorially, it should never speak in anybody else's name. Consequently the "we" has a place. "We" (the state journal); "We" (the organization in the state of New York) "believe and hold thus and thus"—never "I." The editor should be submerged. In informative reports, clinical reports, articles, lectures and addresses, it is pseudomodesty on the part of the man who is reporting. If he doesn't want to use the "I," why does he write it at all? He has his name on the top of it, and he usually puts on two or three titles if he holds them. We delete all but one, always giving him the most prominent title. When he is reporting literature we give the name quoted, reference, documented; but when he comes to conclusions and says what he specifically does, the reason for the article, why trouble the ear-weary public with his presentation at all? Then he should say "I say so," "I think so," and "I do so and so." I don't believe any rules are better than the rules they have in the Journal, that little slip which comes when you have to correct manuscript, telling you the format. The form in which the American Medical Association and its special journals come out are in a class of medical journals by themselves, just because they all conform to that high standard. The scientific technical editorials that are procured from other sources than the immediate home editorial staff also should not be initialed. If you accept them and you adopt them, they become editorial policy and should come out anonymously. If they are quoted, the journal should be quoted and credited and not the "I. C. A." who signed it. If the I. C. A. is writing something so specific that the editorial board cannot adopt it as its point of view, it should not be in an editorial at all; it should be an individual article signed by the man. Finally, editorials that you buy—we buy editorials—should be rewritten. No matter how bad your style is, if you continually hold it up to your people they will finally like it and get used to it. The whole editorial page should have a certain character, even with all its shortcomings. We can't all be Fishbeins. But they should be rewritten by the editorial staff in the language you want to use to your membership. After a while it sort of becomes like the specific uniform of a regiment. That is the way the state journal looks and that is the way it talks, no matter where the ideas come from.

Dr. Creighton Barker, Connecticut: These gentlemen from the great states of Indiana and New York talk glibly of $250,000 for public relations, and they talk in sort of deprecatory fashion about $3,000. I am under the impression that Dr. Jackson doesn't have $300 for public relations. I know I don't. There is a way you can get at it. It isn't the interesting device suggested by the gentleman from Delaware. Medicine, these days, is good press and I think it is possible to make friends with the press. I take exception to the ivory tower Dr. Kopetzky places himself in, that he is unwilling to talk to the press. I am interested in promulgating the policies of the Connecticut State Medical Society, so on every Friday afternoon I have a press conference, just like the President of the United States. I have three big dailies that come out in 10,000 editions on Sundays, and they are glad to get stuff from me. The country dailies and weeklies get the stuff Fishbein wrote after it has been recast five or six times. They welcome it. It is interesting stuff, but it has to have some zip in it, just as Dr. Fishbein says. If you can bring in something that comes home to them they will publish it. I think you can make friends of the press, and I don't think it costs any money. It takes time. You and I haven't $3,000 or $250,000. All we have is time. You have cast-iron weeklies in Maine, the same as we have in Connecticut. They will like the stuff if you will send it to them, and if you send it regularly in a friendly fashion and kind of bring home the ideas the people want, these cast-iron weeklies will publish it. Don't forget the press conference.

Dr. Peter Irving, New York: I think what Dr. Barker of Connecticut is doing is to do a public relations job without himself being paid for it. He really ought to have more salary than he is getting from his state society for that particular piece of work.

Dr. Frank H. Jackson, Maine: I have talked to a great many editors of small papers. In fact, in Maine we have small papers. We have a paper which oftentimes I hardly think is friendly to organized medicine, even if it is in friend Kopetzky's domain. But I have found this out: that the editor of the small country paper is delighted to have the ideas that organized medicine give him. There are a great many country people who read thoroughly their small weekly paper,

and they believe a great deal in what it says. It is all right to talk about the public relations committee that my friend Kopetzky has in New York. A public relations committee exists in the state association in Maine. I can say it is decidedly inadequate. The only way I know is to do as my friend Barker does, become friendly with these fellows, and when some controversial issue comes out you can get a great deal in an honest way through your combating it.

ALCOHOLICS ANONYMOUS

Chicago, Ill., January 20, 1940.

To the Editor: Of great interest to the medical profession is the new approach to a cure for chronic alcoholism developed by alcoholics themselves.

Every physician has been confronted with the problems of the incurable alcoholic. He who although sobered and apparently sane as a result of medical aid suffers the usual and expected relapse and returns to the physician or to the sanitarium for another round of treatment. In his remorse he solemnly rejects alcohol in any form. He then endures a short period of sobriety and again returns to drunkeness.

Alcoholics are the last to admit their inability to "drink like gentlemen," and therefore are prone to devise ways and means, or systems for indulgence, which although inaugurated with sincere intent at the time seem never to serve their purpose. They act only as the forerunners to bigger and better sprees.

The chronic alcoholic seldom can be cured until he reaches a point at which he admits his inability to cope with his problem and has in addition a sincere desire to achieve complete and lasting sobriety.

The chronic alcoholic resents the efforts made by his relatives and friends to help him. He feels they do not understand him nor his problem. But when he takes to people who themselves have been drunkards he realizes that these people do understand for they have had the same personal experiences.

Upon these principles is based a new organization inaugurated by alcoholics. It had its beginning in New York 5 years ago and is known as Alcoholics Anonymous. It now has members in most of the large cities.

In Chicago it is only 32 strong but is rapidly growing. Many of the members have fine intellects and have held positions of great responsibility which they are regaining.

The growth of Alcoholics Anonymous and its influence on the fraternity of chronic drinkers have been achieved almost entirely through personal contact and through the family physician.

When a drinker recognizes the failure of his own systems for stopping drink and admits his need for help, then and then only can he be helped by the fellowship of other members of the group.

When he is ready the new member goes out with other members in occasional "missionary" work. Each member feels in duty bound to go to the aid of another unfortunate.

No sacrifice is too great. No pay is accepted or wanted. In trying to save others the alcoholic saves himself.

The principles of Alcoholics Anonymous do not conflict in any way with religious sects or creeds. The organization is not in any sense a "racket."

There are no officers, no dues and no costs whatever. The only requirements for admission to Alcoholics Anonymous are a sincere desire to get rid of the alcoholic habit and willingness to help others so addicted.

Further information may be had by directing inquiries to Alcoholics Anonymous in care of this publication.

THE EXPENDITURES FOR AUGUST AND SEPTEMBER, 1939, OF 512 FAMILIES OF THE CHICAGO RELIEF ADMINISTRATION

A Study by The Elizabeth McCormick Memorial Fund with the Cooperation of Twenty-Four Participating Agencies

Summary. Detailed information was obtained by personal interviews with 512 C.R.A. families in regard to their expenditures for a period of one month during August and September when relief allowances were 65 per cent. of budgeted

Made at the request and under the auspices of the Health Division, Council of Social Agencies of Chicago, November, 1939.

For copies of the study address Council of Social Agencies of Chicago, 203 North Wabash Avenue.

items. A summary of the findings and conclusions from a study of the collected data follows.

1. The 65 per cent. allowance on budgeted items was totally inadequate to meet family needs. Sixty-one per cent. of the families spent less than one-half as much money for food as is needed for an adequate diet at minimum cost. Eighty-two per cent. paid more for rent than the amount allowed. Slightly under two-thirds of the families paid half again as much for rent as the amount allowed for that purpose. Fifty-four per cent. paid more than allowed for fuel. Light, cleaning supplies, and clothing were purchased although allowances for these items were made in only a small number of cases. Excesses in rent and fuel and unbudgeted expenditures were met at the expense of the food allowance or by going into debt. Fifty-three per cent. of the families were in debt for rent, 45 per cent. for food, 29 per cent. for light, 25 per cent. for cooking fuel, 3 per cent. for ice, and 3 per cent. for clothing.

Evidence strikingly points to the fact that in the majority of families there were unmet needs which might have serious consequences for health and welfare if the drastic curtailment continued.

2. The allowance of 80 per cent. of the budget effective since November 5 is likewise inadequate. Grants for budgeted items still are not sufficient to meet minimum requirements, and the budget still does not provide for all essential needs of the family.

3. Evidence points to the fact that unless adequate allowances are granted for budgeted items and for essentials not now budgeted, the adequacy of the present food allowance will continue to be threatened since it must be drained off to meet the other needs. Even though the 80 per cent. allowance for food supplemented by the milk which is now being distributed approximates the amount necessary for a minimum adequate food budget, in reality it falls far short of this since it must provide for other family needs. The distribution of surplus commodities which has made a contribution to family food needs does not sufficiently supplement the food allowance to insure families against serious food inadequacy so long as inroads are made to meet other needs. Surplus foods are an undependable item as they vary greatly in amount and kind. Furthermore, their inclusion in determining the food budget standard is against the ruling of the Federal Surplus Commodities Corporation.

4. The chief strain upon the food allowance comes from the expenditure for shelter. As previously stated, during August and September 82 per cent. were paying more than the amount allowed—almost two-thirds of them half again as much as the allowance. The greater the percentage of families paying the higher rents, the smaller the percentage having larger proportions of their food allowance available to feed the family. If with the increased allowance the same rent is paid as during August or September, 74 per cent. will still pay more than the allowance for this purpose.

5. The findings of the study indicate the desirability of a reconsideration of the rent budget. For a large proportion of the families the budget estimate for rent seems to fall drastically below the actual amount required. Unless the amount budgeted approximates realistically what clients must pay for shelter even the full allowance will not be sufficient for this item.

6. A sampling study of types of meals served indicates a dangerously low nutrition level. Seventy-nine per cent. had too little milk and 70 per cent. an amount of fruits and vegetables so small as to endanger health. The plan of milk distribution which went into effect November 13 will notably contribute to improvement in the first deficiency. Correction of the latter will depend largely on safeguarding the food allowance against inroads to meet other expenditures. *Such protection cannot be assured unless allowances are granted for all actual necessities as well as for food at a level representing* 100 *per cent. adequacy.*

7. Dietary studies among various segments of the population, especially at the relief and other low-income levels, have disclosed deficiencies similar in character and amount to those presented for this group of families. These lacks in essentials for good nutrition are matters of concern in terms of their probable ultimate effect upon the health of the population. The cause of such deficiencies is, of course, to be

found partially in a lack or shortage of funds to provide the necessary foods, but also in a lack of fundamental knowledge concerning their importance to health. Interviewers reported that even at the same budgetary level, parents differed in the ability with which they met the problem of how to provide food for their families. In terms of relative values probably those mothers were wisest who attempted to provide for nutritional needs by spending proportionally larger amounts for food than for other items, even to the point of meeting rent and other expenses only in part.

It has been established that only with a high degree of intelligence concerning planning, buying, and preparation of food can families be properly fed on a minimum adequate allowance. This ability is often lacking in the population as a whole, but when there is a margin of money available to balance waste and lack of judgment, the results may not be serious. A minimum adequate budget cannot allow for such a margin; therefore, families on low-income levels must spend all funds as economically as possible. This points to the importance of education concerning the wise use of the funds available to families to safeguard the health of children and adults.

Study of the Expenditures for August and September, 1939, of 512 Families of the Chicago Relief Administration

Since July 1936, relief in the City of Chicago has been administered under legislation passed by the Second Special Session of the 59th General Assembly, amending the Illinois Pauper Law, which was originally passed in 1874. In June, 1939, the Illinois Emergency Relief Commission recommended to the 61st General Assembly, then in session, that funds be appropriated in suffcient amounts to provide for what it estimated to be the minimum needs of persons who qualify for aid under the provisions of the law. Appropriations which were made, however, represented only about two-thirds of the amount recommended as needed, and reductions in expenditures were necessary in the various governmental units of the State, including the Chicago Relief Administation. These reductions came at a time when because of already inadequate funds, relief grants for Chicago for a period approximating a year had been seriously curtailed.

Status of Relief under C.R.A. during the Fifteen Months Prior to November 5, 1939. At no time since September 3, 1938, have C.R.A. relief recipients received the full amount of the relief budget. From September 3, 1938, to May 3, 1939, 85 per cent. of the budgets were granted; in May, 75 per cent., in June, 80 per cent., and from July 3 to November 5, 65 per cent. Even the full relief budget provides regularly only for rent, fuel for heating and cooking, and food, and only minimum amounts for these items. Upon the request of physician the food budget may be supplemented by an allowance for a therapeutic diet. While medical care is not budgeted, it is provided on the basis of need. Expenses not regularly budgeted but allowed when the absolute need is evident include burials; moving expenses; certain essential household equipment such as beds and stoves: and carfare when required for attendance at school, clinic or work.

Clothing is budgeted only for the members of the family who may be employed on Work Relief or who are earning part of their budget in W.P.A., or in private industry. Other clothing needs are met in part by garments made by the W.P.A. Sewing Project, but this does not provide coats, suits, warm underwear or stockings. In some instances clothing not provided in this way may be purchased out of a special grant which is totally inadequate. Some shoes are provided but not enough to meet the needs.

There is no provision for personal incidentals or cleaning supplies and very little for replacement of household equipment and furnishings other than those previously mentioned. At the time the data for the present study were assembled, electricity was furnished only to a very few families with small children or with illness in the home.

Comparison of Relief Standards in Chicago with Those of Other Large Cities. In the *Monthly Bulletin on Relief Statistics* of the Illinois Emergency Relief Commission of September, 1939, in connection with material on budget standards and practices in Illinois during October, 1938, the following table is presented which compares public relief in Chicago with that in seven large cities in the United States.

COMPARISON WITH CHICAGO OF RELATIONSHIPS OF MAXIMUM AMOUNTS* BUDGETED BY PUBLIC RELIEF AGENCIES FOR SIX ITEMS FOR A FOUR-PERSON FAMILY, SEVEN LARGE CITIES IN THE UNITED STATES, OCTOBER, 1938.

Item	Average	New York	Chicago	Philadelphia	Detroit	Cleveland	St. Louis	Pittsburgh
Total	110.5	126.0	100.0	101.2	115.4	....†	126.7	93.7
Food	96.9	99.1	100.0	95.2	101.5	89.8	99.1	93.5
Shelter	115.8	137.7	100.0	87.8	146.8	....†	144.3	78.4
Fuel for heating	158.7	234.2	100.0	....‡	86.1	154.6	215.7	...‡
Fuel for cooking	113.1	106.6	100.0	....‡	93.0	111.7	154.5	...‡
Light	102.8	78.4	100.0§	....‡	104.7	105.6	125.8	...‡
Household supplies¶	....	....	....	....	....	....	....	....
Gas, light, coal	167.9	219.2	100.0	169.1	119.9	173.6	235.2	158.8

*Adjusted for intercity differences in price levels.

†Amounts budgeted for shelter not available.

‡Reported as gas, light, and coal combined (see last line for comparison).

§Not budgeted but usual maximum amount used for comparison.

¶Not budgeted by Chicago Relief Administration.

It will be noted that at that time Chicago's standard food budget was practically the same as that of New York City, Detroit, and St. Louis and somewhat higher than the other cities reported; but that for the item of "shelter" New York City was 38 per cent. higher, Detroit 47 per cent. and St. Louis 44 per cent. higher than Chicago, the average for the seven cities being 16 per cent. higher than Chicago's shelter budget. Even more pronounced discrepancies are indicated in the items for heat and light, all cities in the group being higher than Chicago, the lowest being 20 per cent. higher than Chicago and the highest being 135 per cent. higher. These figures relate to a period when the actual allowance in Chicago was 85 per cent. for items which were allowed rather than 100 per cent. which was used as the basis for this table.

Plan for Securing Factual Evidence. A deep concern as to the probable effect of curtailment of relief budgets upon the health of the people involved led the Health Division of the Council of Social Agencies of Chicago to appoint a subcommittee to consider the assembling of pertinent information. Material available to this subcommittee on the expenditures of a small number of C.R.A. families seemed to indicate the value of a larger study as factual evidence of the needs of people on relief. It was agreed that under the general auspices of the Health Division, the Elizabeth McCormick Memorial Fund would undertake such a study with the participation of other agencies also in touch with large numbers of C.R.A. clients in securing data from families and in formulating the general plan.

Plans for the type of inquiry were made jointly by representatives of the Chicago Relief Administration, the Coordination Committee and the Clinic Section of the Health Division of the Council of Social Agencies of Chicago, the Douglas Smith Fund, the Elizabeth McCormick Memorial Fund, and the Infant Welfare Society. The form prepared by this group as a basis for the study is appended, together with an explanatory statement and instructions submitted to all the participating agencies.

It was decided that the data would be secured from a responsible member of the family through interviews either at a clinic or in the home, including as wide a distribution of families throughout the city and as large a number as the time allotted to the study would permit. Participating agencies would then submit the data to the McCormick Fund for tabulation and interpretation.

In addition to the agencies already referred to, further cooperation was secured in assembling information on families through the Public Health Nursing Service of the Chicago Board of Health and through a number of social settlements. A complete list of individual agencies participating is appended.

Full cooperation was given by the Commissioner of Relief in making available all information requested from the Chicago Relief Administration.

The report here presented is an analysis of the expenditures during August or September, 1939, of 512 C.R.A. families when the relief granted was 65 per cent. of the standard relief budget. Seven hundred and forty-four families were interviewed by nurses, social workers, and nutritionists on the staffs of the agencies cooperating in the study. Information was secured regarding the amount spent during the month pre-

vious to the interview for food, rent, and other necessities, the kinds of meals served, and the amounts of foods purchased. Information complete enough to be tabulated was secured on 512 families ranging in size from one to fourteen 24 per cent. of whom were Negro. The findings summarized in tables and charts will be found in the appendix.

General Findings of the Study. The analysis of the expenditures of 512 families indicated that in a large proportion of the cases, money intended for food was being used for the more fixed items of expense such as rent and fuel for cooking and lighting, as well as for other living expenses for which insufficient provision was made in the relief allowances.

Reference to a specific family budget will perhaps prove helpful in clarifying the distinction between the use of the words, "budget" and "allowance" as used by the relief agency and as found in the following discussion. The C. family is composed of a father, mother and two children, a boy of fifteen and a girl of thirteen. The standard relief *budget* for the family is as follows: rent $20,00. fuel for cooking $2.25, and food $33.91, making a *total budget* of $56.16. During the period of the study the relief *allowance* was 65 per cent. of this amount or $36.50.

The major expenditures during August or September of the families surveyed are briefly summarized in Table I. During the month preceding the interview 82 per cent. of the families spent *more* for rent than the amount allowed; 54 per cent. spent *more* for cooking fuel than allowed; 56 per cent. spent *more* for light than allowed. In only 13 cases among the 512 was light allowed. For *food* 84 per cent. spent *less* than the food allowance, an allowance which was only 65 per cent. of a minimum adequate standard.

Rent. An outstanding fact revealed by the study is that 89 per cent. of the families paid all or part of their rent. Three per cent. of the families lived with relatives and were not budgeted for this expense. Not only did 82 per cent. pay more for rent than the amount allowed, but 64 per cent. paid more than half again the amount allocated for this purpose. The effects of living on a curtailed allowance for a long period are evident in the fact that 53 per cent. owed rent for the month of the study or previous months, 14 per cent. owing for more than three months. That such a large percentage of the families studied were paying rents in the face of drastic cuts in the relief budgets reflects the fear of eviction which was repeatedly stated to the interviewers. Apparently this fear is more pressing than the fear of malnutrition with its subsequent ill effects.

Relation between Rent and Food Expenditures. The relation between the money spent for rent and that spent for food is indicated in Table 2. The larger the proportion of the budget spent for rent, the smaller the amount spent for food. When the adequacy of food expenditures of families who paid more than was allowed for rent is compared with that of families who paid less than was allowed for rent, it is strikingly evident that rent was paid at the expense of food. Sixty-nine per cent. of the families who paid more than allowed for rent had less than half enough money to purchase a minimum adequate diet. Only 4 per cent. of the families who paid more than allowed for rent spent as much as 80 per cent. of the minimum adequate amount for food.

Adequacy of Food Expenditures. The amount of money spent by families for food was compared with the C.R.A. standard food budget. This is the minimum amount on which adequate nutrition can be assured and only if the necessary factors are provided by the least expensive foods. Of the 512 families only 14, or 3 per cent., had within 10 per cent. of this amount, as shown in Table 3. Sixty-one per cent. had less than one-half as much money as needed for a minimum adequate diet.

Effect of Surplus Foods on Adequacy of Food Expenditures. Since families on relief receive surplus commodities distributed by the federal government, the monetary value of these foods was added to the money available for food in another comparison. For this purpose it was assumed that all families received the maximum amount of the surplus foods distributed although in actual practice this was not the case. The most optimistic picture is thus presented. As shown in Table 3, the situation is then improved but is still far from satisfactory. Nine per cent. of the families, as against 3 per cent. when surplus foods are not considered, then had within

10 per cent. of the amount necessary for an adequate diet. Thirty-two per cent. with surplus foods added, as against 61 per cent. without them, had less than one-half the amount necessary for minimum adequacy.

Shortage in Types of Food. The inadequate amount of money available for food showed itself in a shortage of protective foods, as indicated in Table IV. These are the foods which supply elements essential for the growth of children and for health at all ages. A diet deficient in protective foods for a prolonged period must eventually result in bodily impairment.

Milk was used in insufficient amounts by the majority of the families, as based on the analysis of a week's purchases of pasteurized, evaporated and dried milk. According to accepted standards, at least a pint of milk is needed daily by each person and more is desirable for children. Seventy-nine per cent. of the families had less than a pint of milk daily for each person. Thirty-seven per cent. had less than one glass of milk daily per person. Four per cent. had no milk at all.

Authorities agree that at least three servings daily of fruits or vegetables including potato are necessary for the maintenance of health. Thirty per cent. of the families had this minimum amount. Thirty-one per cent. had only two servings, 24 per cent. had one, and 15 per cent. had none at all. According to these findings, 70 *per cent. of the relief families had an amount of fruits and vegetables so small as to endanger health.*

Meat, fish and eggs provide good quality protein as well as other nutritive factors that may be lacking, particularly if the diet is low in milk. Nutrition authorities recommend at least one serving of meat, fish, or eggs daily. The meals of 30 per cent. of the families failed to meet this standard. This comparatively good record is probably due at least in part to the fact that eggs were a surplus commodity during the months the data were assembled.

These findings indicate that some form of malnutrition would be inevitable for these relief families if the limited expenditures for food were to continue, for *even when compared with an extremely low standard over three-fourths had too little milk and seven-tenths had too few vegetables and fruits.*

(To be continued)

HIGH LIGHTS IN THE HISTORY OF CHICAGO MEDICINE

(Author's Abstract)

Chicago, Ill., Jan. 17, 1940.

To the Editor:

An index of the state of culture of any community is the state of medicine in it. From that standpoint a glimpse of the history of medicine of Chicago should have some interest.

The history of Medicine in Chicago begins with the beginning of Chicago. There was a doctor here when Marquette spent the winter of 1674-5 and there have been doctors here ever since when there have been whites here. Dr. Smith came in with Capt. Whistler's troops, under Lieut. Swearingen in 1803, and Dr. Van-Voorhees was killed in the massacre of 1811. There were excellent men here during all of the occupation of Fort Dearborn, but the real history of Chicago medicine begins with the incorporation of the city in 1833.

God forbid that I should try to sketch the entire history of Chicago medicine in a friendly address, but I can indicate its status by a few men who have represented Chicago medicine at its best from 1835 to the present time. The men that I select as the Chiefs are:

Daniel Brainard, from 1835 to 1866.
John Evans, from 1845 to 1858.
N. S. Davis, from 1849 to 1904.
John H. Rauch, from 1857 to 1894.
Christian Fenger, from 1878 to 1902.
Frank Billings, from 1881 to 1932.
Ludvig Hektoen, from 1887 to the present.

Under the leadership of these men Chicago medicine has always met its responsibilities, not only its local responsibilities but its reponsibilities in the development of the science and art of medicine, in medical education, in hospitals, in research and in sanitation and public health. The cultivation of research in Chicago has resulted in a remarkably fine harvest in our generation. The work of Ricketts in Rocky Mountain Spotted Fever and Typhus, of the Dicks in Scarlet Fever, of Maud Slye in Cancer, of Luckhardt in anesthesia—to mention only epochal achievements—stamps Chicago as one of the most fruitful centers of medical study. Chicago medicine has been outstanding in its leadership in the management of the infectious diseases, particularly typhoid fever. The results are shown in the health record of the city at the present time: today and for many years Chicago has been in this respect one of the cities of the world.

DEPARTMENT OF PUBLIC HEALTH

SPRINGFIELD

To the Editor:

In view of the wide prevalence of and high mortality from pneumonia and the considerable value of anti-serum and sulfapyridine in the treatment of patients, both anti-serum and sulfapyridine are distributed free by the State Department of Public Health to physicians who are willing to meet certain reasonable requirements.

These requirements include the typing in an approved laboratory of the pneumonia in each patient for whom either anti-serum or the drug or both is requested and the rendering of reports by the physicians to the Department on the use of the therapeutic agents and the apparent results.

Anti-serum and sulfapyridine may be obtained from any one of 20 serum centers located at strategic points throughout the State. Typing is done at these serum centers and also at any one of 123 approved typing stations well scattered throughout the State. The typing is done free in any of the public laboratories, but a charge is made for typing in all private laboratories.

I enclose herewith a copy of the regulations and a copy of the list of serum centers and of approved typing stations as of January 1, 1940. You may wish to publish this matter in an early issue of the JOURNAL for the information of the profession.

Very truly yours,
A. C. Baxter, M. D.,
Director of Public Health.

REGULATIONS GOVERNING FREE DISTRIBUTION OF ANTIPNEUMOCOCCIC SERUM AND SULFAPYRIDINE BY ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH 1939-1940

1. Antipneumococcic rabbit serum in 50,000 unit vials for all types of pneumococcic pneumonia will be supplied without cost to the patient.

2. Antipneumococcic rabbit serum in 50,000 unit vials for types: 1, 2, 3, 4, 5, 7, 8, 14, 19 is to be kept in stock at all established serum centers. Serum for all other types may be obtained by having the approved typing stations telephone (Seeley 1463) or telegraph (prepaid) the Chicago office of the Illinois Department of Public Health, Section of Pneumonia Control, 1800 West Fillmore Street, Chicago, Illinois. The physician's personal request cannot be accepted without confirmation of the approved typing station.

3. Two hundred thousand (200,000) units will be issued for all Type II and III cases. One hundred thousand (100,000) units will be issued for all other cases. At least double this amount should be requested in cases of multiple lobe involvement, bacteremia, pregnancy or first week puerperium, purulent infections or age beyond 45. If the physician requests more serum than the above, it will be necessary to have the sputum retyped for check diagnosis.

4. Twenty-five (25) gm. of sulfapyridine may be acquired for each case of typed pneumonia. Sulfapyridine will be issued on the same basis on which serum is issued. One half of the basic serum dose may be used for all cases of early uncomplicated pneumonias where sulfapyridine has been started. THERE WILL BE NO SUPPLEMENTARY SULFAPYRIDINE ISSUED FOR AN INDIVIDUAL CASE OF PNEUMONIA.

5. In order to obtain serum or sulfapyridine, the sputum or other specimen from a pneumonia patient must be typed in a laboratory approved by the Illinois Department of Public Health for pneumonia typing.

6. A request for serum or sulfapyridine must be filled out in the official form provided and must accompany the specimen submitted to the laboratory.

7. Because of the emergency involved, the specimen should be presented by the physician or a messenger who will wait for the typing to be done and then take the laboratory report together with the original request card to the nearest serum center for issue of the appropriate serum or sulfapyridine.

8. SERUM WILL BE ISSUED ONLY FOR THE TYPE FOUND IN THE SPECIMEN AND SULFAPYRIDINE WILL BE ISSUED FOR PROVEN CASES OF STREPTOCOCCIC PNEUMONIA, FRIEDLANDER'S PNEUMONIA, AS WELL AS PNEUMOCOCCIC PNEUMONIA.

9. By availing himself of the pneumococcic typing service offered, whether serum is actually used or not, the physician obligates himself to submit a Physician's Pneumonia Case Report on a blank supplied by the typing laboratory.

10. All unused vials of serum and tablets of sulfapyridine should be promptly returned to the serum center from which obtained. The physician is requested not to open a package of serum until just before using it. An opened package of serum cannot be re-issued.

PNEUMONIA SERUM AND LABORATORY TYPING SERVICE

Jan. 1, 1940.

Rabbit serum and sulfapyridine for the treatment of all types of pneumococcus pneumonia are now available from the Illinois Department of Public Health *free* to the physicians if the typing is done in a laboratory approved for that purpose by the Department. Continuous day and night service is maintained at all *serum centers*. Typing is done free at the state and municipal laboratories. All other laboratories make a charge. Physicians are asked not to request serum unless the typing has been done in an approved laboratory nor for patients ill with pneumonia for more than 96 hours. Serum centers and typing stations now ready to function are listed below:

SERUM AND TYPING

Bloomington—*Health Department, Bloomington.
Carbondale—*State Diagnostic Lab., Normal Univ.
Champaign—*State Diagnostic Lab., 307 S. Wright St.
Chicago—*Chicago Board of Health, 54 West Hubbard St.
Chicago—*State Diagnostic Lab., 1800 W. Fillmore St.
Chicago—Billings Memorial Hospital, 950 E. 59th St.
E. St. Louis—*East Side Health District, 325 E. Broadway.
Effingham—St. Anthony's Hospital, Effingham.
Evanston—*City Health Department, 1806 Maple Ave.
Evanston—Evanston Hospital Lab., 2650 Ridge Ave.
La Salle—Hygienic Institute, La Salle.
Moline—Lutheran Hospital, 502 Fifth Ave.
Oak Park—*City Health Department, Euclid Ave. at State.
Oak Park—West Suburban Hospital, 518 N. Austin.
Olney—Olney Sanitarium, 606-610 E. Main St.
Peoria—*Methodist Hospital, 221 Glen Oak St.
Qincy—Soldiers and Sailors Home, Quincy.
Rockford—Rockford Hospital, Court & Chestnut St.
Springfield—*State Diagnostic Lab., Capitol Building.
Waukegan—Victory Memorial Hospital, 1324 Sheridan Road.

DOWNSTATE—TYPING ONLY

Alton—Alton Memorial Hospital, Rock Springs Drive.
Alton—St. Joseph's Hospital, Oak & 5th Sts.
Aurora—Copley Hospital Lab., Lincoln & Weston Ave.
Aurora—St. Joseph Mercy Hospital, 421 N. Lake St.
Belleville—St. Elizabeth's Hospital Lab., 328 W. Lincoln.
Belvidere—Highland Hospital, 1625 S. State St.
Belvidere—St. Joseph's Hospital, Belvidere.
Bloomington—Markowitz Clinical Lab., Bloomington.
Bloomington—Mennonite Hospital, 807 N. Main St.
Bloomington—St. Joseph's Hospital, 824 W. Jackson.
Cairo—St. Mary's Hospital Lab., 2025 Walnut St.
Canton—Coleman Clinic, 24 N. Main St.
Champaign—Burnham City Hospital, 310 E. Springfield.
Danville—Lake View Hospital Lab., 312 N. Logan Ave.
Danville—St. Elizabeth's Hospital Lab., 602 Green St.
Decatur—Decatur & Macon County Hospital, End of N. Edward St.
Decatur—St. Mary's Hospital Lab., 220 S. Webster St.
DeKalb—DeKalb Public Hospital, 719 S. First St.
DuQuoin—Marshall Browning Hospital, 800 N. Washington St.
E. St. Louis—Christian Welfare Hospital Lab., 1509 Illinois Ave.
E. St. Louis—St. Mary's Hospital Lab., 129 N. 8th St.
Elgin—Elgin Municipal Lab., Elgin.
Elgin—Sherman Hospital, 934 Center St.
Elmhurst—Elmhurst Community Hospital, 189 Avon Rd.
Freeport—C. L. Best Laboratory, 3 E. Stephenson.
Freeport—Deaconess Hospital, 420 S. Harlem.
Freeport—St. Francis' Hospital, 1209 S. Walnut.
Galesburg—*State Lab., Cottage Hospital.
Geneva—Community Hospital Lab., Geneva.
Highland—St. Joseph's Hospital Lab., Highland.
Jacksonville—Our Saviour's Hospital Lab., 446 E. State St.
Joliet—St. Joseph's Hospital Lab., 426 N. Broadway.
Joliet—Silver Cross Hospital Lab., Eagle & Walnut Sts.
Kankakee—St. Mary's Hospital, Kankakee.
Lincoln—St. Clara's Hospital Lab., 6th & Maple.
Litchfield—St. Francis' Hospital Lab., Litchfield.
Macomb—Roscoe Millet Lab., 120½ S. Side Square.
Moline—Moline Public Hospital, 7th St. & 10th Ave.
Normal—Brokaw Hospital, Franklin Ave.
Ottawa—Ryburn Memorial Hospital Lab., 701 Clinton St.
Pana—Huber Memorial Hospital Lab., Pana.
Peoria—John C. Proctor Hospital, 2nd & Fisher St.
Pittsfield—P. V. Dilts, M.D. office, 101½ E. Washington.
Quincy—Blessing Hospital Lab., 1000 Spring St.
Quincy—Frank Cohen, M.D. Clin. Lab., Quincy.
Quincy—Quincy Clinic Lab., 1416 Maine St.
Quincy—St. Mary's Hospital Lab., 1400-1500 Broadway.
Robinson—Brooks & Teasley Lab., New Otey Building.
Rockford—*Rockford Health Department, City Hall.
Rockford—St. Anthony's Hospital, 1401 E. State St.
Springfield—St. John's Hospital Lab., 7th & Mason Sts.
Springfield—Springfield Hospital Lab., 1201 N. 5th St.
Sterling—Sterling Public Hospital Lab., 1701 1st Ave.
Streator—St. Mary's Hospital Lab., 615 S. Bloomington
Sycamore—Sycamore Municipal Hosp. Lab., 615 Somonauk St.
Taylerville—St. Vincent's Hospital, Taylerville.
Urbana—Mercy Hospital Lab., 1412 W. Park.
Watseka—The Iroquois Hospital, S. Fourth St.
Waukegan—St. Therese's Hospital Lab., W. Washington St.

CHICAGO AREA—TYPING ONLY

Berwyn—Berwyn Hospital, 3245 S. Oak Park Ave.
Blue Island—St. Francis' Hospital Lab., 12948 S. Gregory St.
Chicago—
Abel Laboratories, Inc., 7 W. Madison.
Acme Clinical Laboratory, 7910 S. Cottage Grove.
American Hospital, 850 W. Irving Park.
Augustana Hospital Lab., 411 Dickens.
Belmont Hospital, 4158 Melrose Ave.
Central X-ray Clin. Lab., 58 E. Washington.
Century Medical Lab., 7937 Cottage Grove.
Chicago Memorial Hospital, 660 Groveland Pl.
Chicago Municipal T. B. San., 5601 N. Pulaski Road.
Children's Memorial Hospital, 707 Fullerton.
Clinical Laboratory, 1180 E. 63rd.
Cook County Hospital, Wood & Harrison Sts.
Edgewater Hospital Lab., 5700 N. Ashland Ave.
Englewood Hospital Lab., 6001 S. Green St.
Evangelical Hospital, 5421 S. Morgan St.
Franklin Blvd. Hos. Lab., 3230-40 W. Franklin.
Garfield Park Community Hos., 3813-25 W. Washington.
Grant Hospital Lab., 551 Grant Place.
Holy Cross Hospital, Chicago.
Illinois Central Hos. Lab., 5800 Stony Island.
Illinois Masonic Hospital, 836 Wellington St.
Irving Park Clin. Lab., 4013 Milwaukee Ave.

*Laboratories doing free typing service.

Jackson Park Hospital Lab., 7531 Stony Island.
Kaplan, Maurice I., M. D. Lab., 4010 W. Madison St.
Little Company of Mary Hospital, 95th St. and California.
Lincoln Gardner Lab., 30 N. Michigan Ave.
Loretta Hospital, 645 South Central Ave.
Lutheran Deaconess Hospital Lab., 1138 N. Leavitt St.
Lutheran Memorial Hospital, 1116 N. Kedzie Ave.
Mercy Hospital Lab., 2537 Prairie Ave.
Michael Reese Hospital Lab., 2839 Ellis Ave.
Molay Medical Lab., 185 N. Wabash Ave., Rm. 1125.
Moore Clinical Lab., 55 E. Washington St.
Mother Cabrini Hospital, 1200 West Cabrini.
Mt. Sinai Hospital Lab., 2750 W. 15th Pl.
John B. Murphy Hospital, 620 Belmont Ave.
Norwegian-American Hosp. Lab., 1044 N. Francisco.
Osteopathic Clinical Lab., 5200 S. Ellis Ave.
Passavant Hospital Lab., 303 E. Superior St.
Presbyterian Hospital Lab., 1753 W. Congress St.
Provident Hospital, 426 E. 51st St.
Ravenswood Hospital Lab., 1931 Wilson Ave.
Research & Educational Hospital, 1819 Polk, U. of I.
Roseland Community Hospital, 45-67 W. 111th St.
St. Anne's Hospital Lab., 4950 Thomas St.
St. Anthony de Padua Hosp. Lab., W. 19th St. & Marshall.
St. Elizabeth's Hospital Lab., 1431 N. Claremont.
St. Joseph's Hospital Lab., 2100 Burling.
St. Luke's Hospital Lab., 1439 S. Michigan Ave.
St. Mary of Nazareth Hosp. Lab., 1120 N. Leavitt St.
Scientific Pathological Labs., 6 N. Michigan Ave.
South Shore Hospital, 8015 S. Luella.
South Shore Medical Lab., 2937 E. 79th St.
Swedish Covenant Hosp. Lab., 5145 N. California Ave.
Washington Blvd. Hosp. Lab., 2449 Washington Blvd.
Wesley Memorial Hospital Lab., 2449 S. Dearborn St.
Women's & Children's Hospital, 1606 W. Maypole.
Woodlawn Hospital Lab., 6058 Drexel Ave.
Evanston—Church St. Clin Lab., 636 Church St.
Evanston—North Shore Clinical Lab., 636 Church St.
Evanston—St. Francis' Hospital Lab., 355 Ridge Ave.
Highland Park—Highland Park Hospital Lab., 650 Homewood Ave.
Melrose Park—Westlake Hospital Lab., 612 N. 12th Ave.
Oak Park—Lewis R. Hill Clinical Lab., 1011 Lake St.
Oak Park—Oak Park Hospital Lab., 525 Wisconsin Ave.

DEPARTMENT OF PUBLIC HEALTH

SPRINGFIELD

To the Editor:

We are attaching two lists of newly approved laboratories for publication in your journal.

One lists the laboratories approved for Kahn and gonococcus tests and the other the laboratories approved for pneumonia typing.

LABORATORIES APPROVED FOR PRE-MARITAL TESTS AS OF JANUARY 8, 1940

Carle Hospital Clinical Laboratory, 602 W. University, Urbana.
*Laboratories of the Chicago Lying-In Hospital, 5848 Drexel Avenue, Chicago.
*Seymour J. Cohen, M.D., Laboratory, 185 N. Wabash, Chicago.
*The Iroquois Hospital Laboratory, South Fourth St., Watseka.
Jefferson Park Hospital Laboratory, 1400 W. Monroe St., Chicago.
*Norbury Sanatorium Laboratory, 1631 Mound Ave., Jacksonville.
*Out Patient Department, U. of C. Clinics, 950 E. 59th St., Chicago.
St. Joseph's Hospital, 824 W. Jackson, Bloomington.
St. Therese's Hospital Laboratory, W. Washington St., Waukegan.
St. Vincent's Hospital Laboratory, 423 S. Walnut St., Taylorville.
Sherman Hospital Laboratory, 934 Center St., Elgin.
*South Shore Hospital Laboratory, 8015 S. Luella Ave., Chicago.
Southtown Clinical Laboratory, 6858 S. Halsted St., Chicago.
Woodruff Clinic Laboratory, 250 N. Ottawa St., Joliet.

LABORATORIES APPROVED FOR PNEUMONIA TYPING AS OF JANUARY 8, 1940

Loretto Hospital Laboratory, 645 S. Central Ave., Chicago.
Marshall Browning Hospital Laboratory, 800 N. Washington St., DuQuoin.
Mother Cabrini Hospital Laboratory, 1200 Cabrini St., Chicago.
Passavant Memorial Hospital, 512 E. State St., Jacksonville.
St. Charles Hospital Laboratory, New York and Fourth Sts., Aurora.

Approved for Kahn & Gc Tests

Tower Clinical Laboratory, 6 N. Michigan avenue, Chicago.

Approved for Pneumonia Typing

Evangelical Deaconess Hosp. Laboratory, 7th and Walnut streets, Lincoln.

Morris Hospital Laboratory, 150 W. High street, Morris.

Paris Hospital Laboratory, 302 E. Crawford, Paris.

St. Francis Hospital Laboratory, 616 N. Glen Oak avenue, Peoria.

St. Mary's Hospital Laboratory, 1015 O'Connor avenue, La Salle.

Tower Clinical Laboratory, 6 N. Michigan Avenue, Chicago.

U. M. W. of A. Medical & Relief Association, 508 W. St. Louis street, West Frankfort.

Yours very truly,
H. E. McDaniels, Ph.D.,
Co-ordinating Bacteriologist.

Original Articles

THE NATIONAL HEALTH ACT‡

Hon. Edward Raymond Burke

U. S. Senator from Nebraska

The so-called National Health Act, S.1620, introduced by Senator Robert F. Wagner of New York in February, 1939, and considered at extensive hearings before a subcommittee of the Senate Committee on Education and Labor during April, May, June and July, is approaching a stage requiring a decision by the Congress. It is assumed that the bill may be reported to the Senate during the coming session and that it may be pressed to a vote in both Houses while the primary election campaigns of 1940 are in progress.

Seldom has more formidable propaganda in behalf of legislation been organized than in the case of this measure. The bill had its genesis in the work of committees organized under the President's Committee on Economic Security which formulated the general outlines of the program incorporated in the Social Security Act of 1935. Following the enactment of that law President Roosevelt in August, 1935, appointed the Interdepartmental Committee to Coordinate Health and Welfare Activities. This committee, with the assistance of a technical committee selected from government departments, prepared the comprehensive program which is the basis of the present Wagner bill. A general conference, selected for the most part from groups known to be favorable, considered the program in July 1938. President Roosevelt submitted the report of his committee together with his own endorsement to Congress in January, 1939.

The bill upon its introduction in the Senate was referred to the Committee on Education and Labor rather than to the Committee on Finance which was in charge of the Social Security Act and which in the 1939 regular session reported and obtained the enactment of comprehensive amendments to the original law. The present Wagner bill is in the form of amendments to several titles of the Social Security Act, with all of which the Finance Committee is intimately familiar. The assumption is that the proponents of the bill believed the prospect for complete approval of their far-reaching plan was better at the hands of the Committee on Education and Labor, whose members were selected chiefly because of their interest in subjects related to education and labor, rather than if it were entrusted to the Committee on Finance, whose members have as their primary responsibility the raising of revenues to meet the costs of the Government.

The subcommittee which conducted hearings was composed of Senators James E. Murray of Montana, chairman. Vic Donahey of Ohio, Allen J. Ellender of Louisiana, and Robert M. La-Follette of Wisconsin.

Emphasis upon objectives rather than methods has become a common practice in the promotion of panaceas for existing evils. The official title of the bill, "The National Health Act of 1939," appears to indicate a program to which no objection can be advanced. The title, however, typifies the objectives rather than methods of accomplishing them. Everyone wishes to promote the national health. Anyone found in opposition is accused of sinister motives. A member of Congress seeking reelection takes his political life in his hands when he ventures to vote against a bill which on its face advances the health of the nation and provides better care for the underprivileged portion of the population.

The Federal Government has taken long strides in its recent assumption of responsibility for social welfare. This trend has had a large measure of justification in the unusual conditions of the depression which swept over the world in 1929. Sufficient time has elapsed, however, to make it clear that the actions of the Federal Government have not always proved wise and that the schemes of well-meaning enthusiasts require more careful examination than has sometimes been given. The rejection in some of the recent State elections of fanciful old age and other social security plans was a hopeful sign. The people are turning their attention more to methods and do not propose long to be confused by those who stress worthy objectives but fail to put forward a proper mechanism for their attainment.

Objections to the pending National Health Act may be grouped around four points, as follows:

‡Address, Chicago Medical Society, Cook County Health Forum, December 6, 1939.

1. Enactment of the legislation would be a further step toward a centralization of authority in the Federal Government and a destruction of the sovereignty of the States.

2. Paternalistic features of the plan would weaken the moral fiber and tear down habits of self-reliance and the exercise of individual intiative which have been fundamental characteristics of the American people under our system of government.

3. The origin and manner of presentation of the program afford a striking example of the tendency of bureaucracy to expand its power.

4. Cost of the program, on top of tremendous obligations already assumed for social services, would be a serious drain on the Budgets of Federal and State Governments, and its financing would add a further obstacle to the functioning of our economic structure.

The dual system of government, under which the Federal Government and the States each possess sovereignty in their respective fields, has been one of the checks and balances which has kept the United States on an even keel through the years. It has helped to prevent a centralization of authority in the Federal Government, which inevitably would have led to abuses of power resulting in a breakdown of the governmental system. Except for the existence of the checks and balances provided by the dual form of government, the division of powers of the Federal Government among three coordinate branches, and the guaranties of individual liberties in the Bill of Rights, the United States might have been caught in the world movement toward dictatorships. Even with the existence of these checks we have witnessed an alarming tendency toward centralization of power.

From the beginning of our government matters relating to the health of the people have been primarily the concern of the States and local governments. It has been contrary to our system to regiment our people from Washington, even if the regimentation is intended to improve their health. We tried through a constitutional amendment to have the Federal Government control the drinking habits of citizens, but an aroused electorate finally instructed Congress to propose repeal of the amendment.

In the past decade the storm and stress of depression have been responsible for a very great increase in Federal power at the expense of the State. To some extent this employment has been based on necessity. The financial plight of our local governments made it impossible for them to bear the entire burden of relief and other activities intended to relieve the distress of victims of the depression. At the same time, many of those who favored Federal appropriations for social purposes have recognized that the new system would lead to waste and extravagance and might be responsible for a new generation of people without the sturdy, self-reliant characteristics of previous generations. Because of the abuses and injurious effects of our present relief system a future Congress is likely to restore a greater measure of responsibility to the States and local governments.

The proponents of the National Health Act emphasize that it does not provide for Federal administration of the expanded health program. As described by the President in his special message to Congress last January, "the essence of the program recommended by the Committee is Federal-State cooperation." It is true, as he stated, that the bill, instead of proposing a great expansion of Federal health services, provides for a comprehensive program to be administered by States and localities with the assistance of Federal grants-in-aid.

Nevertheless, the program contemplates the expenditure of Federal funds to meet a very considerable part of the costs and requires Federal approval of the original plans of the States and of their administration. The Federal Government proposes to coerce the States into embarking upon elaborate health programs, whether or not an acute need may exist or whether the local share of the funds might be better expended for other purposes. Thereafter, the Federal Government proposes to remain in complete control, a State exercising its discretion only at the peril of being cut off from Federal funds.

The Federal Government will be in a position to coerce the States to adopt health programs. If a State does not choose to accept Federal money it is passing by an opportunity to share funds contributed by taxpayers of the entire nation. Furthermore, regardless of whether the State takes Federal money, taxes paid by its own citizens to the Federal Government will be used for health programs of other States. Under the circumstances, few if any States will refuse

the grants-in-aid. Acceptance means that the States themselves must expend very considerable amounts for the same purposes, these amounts being expended not at the discretion of State or local officials but as required by the Federal bureaucracy in Washington. The expenditures of State or local funds may mean that no money will be available for purposes which in the judgment of resident citizens are more urgent.

In effect, the sovereignty of the States will be destroyed. The administrative agencies in the States will become mere puppets of the Federal Government. All of this would not be strange in a totalitarian government of Europe, but it would represent a flagrant violation of our principles of government.

An examination of the provisions of the Wagner bill will help to make the situation clear.

The first part of the bill provides for grants to States for maternal and child welfare. Under this heading are (1) maternal and child health services, and (2) medical services for children and services for crippled and other physically handicapped children.

The second part provides for grants to the States for public-health work and investigations.

The third for grants to the States for hospitals and health centers.

The fourth for grants to the States for medical care.

The fifth for grants to the States for temporary disability compensation, or in other words, for compulsory health insurance.

Under the first subdivision of the first part of the bill grants are authorized "for the purpose of enabling each State, as far as practicable under the conditions in such State, especially in rural areas suffering from severe economic distress, to extend and improve services, supplies, and facilities for promoting the health of mothers and children, and medical care during maternity and infancy, including medical, surgical and other related services, and care in the home or in institutions, and facilities for diagnosis, hospitalization and after-care." The grants under the second subdivision are "To extend and improve services, supplies and facilities for the medical care of children, and services to crippled and other physically handicapped, children in need of special care, such services and facilities to include medical, surgical, corrective, and other related services and care in the child's home or in institutions, and facilities for diagnosis, hospitalization, or other institutional care."

In the second part of the bill grants are authorized to enable the States "to extend and improve public-health work, including services, supplies, and facilities for the control of tuberculosis and malaria, for the prevention of mortality from pneumonia and cancer, for mental health, and industrial hygiene activities, and to develop more effective measures for carrying out the purposes of this part of this title, including the training of personnel." As a second subdivision under this part appropriations are made to the Public Health Service through the National Institute of Health for investigations relating to health, disease, sanitation and matters pertaining thereto.

The third part of the bill authorizes grants to enable the States "to construct and improve needed hospitals, to assist the States for a period of three years in defraying the operating cost of added facilities, and to develop more effective measures for carrying out the purposes of this title."

The fourth part of the bill authorizes grants to enable the States "to extend and improve medical care (including all services and supplies necessary for the prevention, diagnosis, and treatment of illness and disability), and to develop more effective measures for carrying out the purposes of this title, including the training of personnel."

The fifth part of the bill authorizes grants to assist the States "in the development, maintenance, and administration of plans for temporary disability compensation."

The authorizations for appropriations under the first part of the bill are, for maternal and child health services, for the first three fiscal years, $8,000,000, $20,000,000 and $35,000,000, respectively, and, for medical services for children and services for crippled and other physically handicapped children, for the first two fiscal years, $13,000,000 and $25,000,000, respectively.

Authorizations of appropriations under the second part of the bill are, for grants to the States for public-health work, for the first three fiscal years, $15,000,000, $25,000,000 and $60,000,000, respectively, and, for investigations by the Public Health Service through the National

Institute of Health, for the first three fiscal years, $3,000,000, $3,500,000 and $4,000,000, respectively.

Authorizations of appropriations under the third part of the bill, for grants to States for hospitals and health centers, for the first three fiscal years are $8,000,000, $50,000,000 and $100,000,000, respectively, with additional unestimated amounts for each year for mental and tuberculosis hospitals, and also an annual amount, commencing at 1,000,000, for administrative expenses of the Public Health Service.

The authorization of appropriations under the fourth part of the bill, for grants to States for medical care, for the first fiscal year, is $35,000,000.

The authorization of an appropriation under the fifth part of the bill, for grants to States for temporary disability compensation, for the first fiscal year, is $10,000,000, with $250,000 additional to the Social Security Board for administrative expenses.

In each case the authorization provides for continuing appropriations for an indefinite period of such amounts as are "deemed necessary" or are "sufficient" for the specified purposes.

These sums, including amounts for the second or third years equal to the authorizations for the first or second years but not including the unestimated amounts for mental and tuberculosis hospitals, total $93,250,000 for the first fiscal year, $169,750,000 for the second fiscal year, and $270,250,000 for the third fiscal year.

According to the sponsors of the plan, total expenditures of the Federal Government and the States by the time the program has been in operation for ten years will amount to as much as $850,000,000 annually. The Federal part of this cost will be considerably more than the $270,000,000 indicated for the third fiscal year.

The five separate parts of the bill contain somewhat similar provisions with respect to conditions which must be met by the States before they can obtain the Federal grants-in-aid. In each case broad power is vested in a Federal Bureau or Board. The Chief of the Children's Bureau, subject to the approval of the Secretary of Labor, is the controlling official in the case of grants for maternal and child health services and for medical services for children and services for crippled and other physically handicapped children. The Surgeon General of the Public Health Service is the official who must approve the plans of the States in connection with public-health work. The same official controls grants to the states for hospitals and health centers. The Social Security Board is given jurisdiction over grants to States for medical care and for plans for temporary disability compensation.

Some idea of the maze of red tape which will be involved in the contacts between the States and the Federal Government may be gained from this scattering of authority among these three different Federal agencies. It is more than likely that in most States all of the health services will be under a single agency, which will be subject to the orders of three Federal agencies, the Children's Bureau, the Public Health Service and the Social Security Board.

The power of the Chief of the Children's Bureau in the case of grants to States for maternal and child health services is typical of the authority vested in the Federal Bureaucracy under each of the five parts of the bill. The amount of allotments to the various States will be determined in accordance with rules and regulations prescribed by the Chief of the Children's Bureau with the approval of the Secretary of Labor. Factors to be taken into consideration are (1) the total number of births in the latest calendar year for which statistics are available, (2) the number of mothers and children in need of the services, (3) the special problems of maternal and child health, and (4) the financial resources of the States.

Before a State can get its money it must submit a satisfactory plan. This plan must provide for financial participation by the State. It must provide for a State-wide program or for extension of the program each year so that it shall be in effect in all political subdivisions in need of the services within five years. It must provide for the administration of the plan by the State health agency or for the supervision by that agency of any part of the plan delegated to another State or local agency. It must provide such methods of administration as are found by the Chief of the Children's Bureau to be necessary for the efficient operation of the plan, including methods relating to the establishment and maintenance of personnel standards on a merit basis, and methods of establish-

ing and maintaining standards of medical and institutional care. It must provide for an advisory council or councils composed of members of the professions and agencies, public and private, that furnish services under the State plan, and other persons informed on the need for or provision of maternal and child services. It must provide that the State health agency shall make such reports, in such form and containing such information, as the Chief of the Children's Bureau may from time to time require, and comply with such provisions as that official may from time to time find necessary to assure the correctness and verification of such reports. It must provide for cooperation and, when necessary, for working agreements between the State health agency and other public agencies. It must provide that the State health agency shall have authority to make such rules and regulations as are necessary for efficient operation of the service.

Besides the advisory council or councils to be set up in the States the Chief of the Children's Bureau is authorized to establish one or more such bodies. It is noteworthy that in the case of none of these councils is there a requirement of representation of the professional organizations such as the American Medical Association. Members of the interested professions are to be on the councils, but they may be handpicked by the Federal bureaucracy rather than by the profession itself.

The requirements with respect to grants for other purposes are very similar to those outlined relating to maternal and child welfare. In the case of grants for the development and maintenance of plans for temporary disability compensation certain general specifications are provided for such plans. It is stipulated that the legislatures of the States in enacting laws for what the bill refers to as temporary disability compensation, but which is more commonly known as health insurance, must surrender their sovereignty. The State laws must contain provisions giving the Federal Social Security the final voice in the determination of administrative plans. The State agencies administering health insurance must make reports to the Social Security Board in conformity with its regulations.

Considerable discretion is vested in the Federal bureaucracy in the determination of allotments to the various States under the different grants. In the case of health insurance the Federal Government would bear one-third of the total cost under approved State systems. With respect to the four other types of grants the States will fare inversely to their financial resources. The Secretary of the Treasury, the Secretary of Labor and the Chairman of the Social Security Board are authorized to determine the financial resources of the States annually on the basis of their per capita income. The percentage of the total cost of State programs for maternal and child welfare, public health and hospitals and health centers will vary from 33⅓ to 66⅔ per cent, the richest States to get the smaller allotments and the poorer States larger amounts. In the case of State programs for medical care, the percentages will range from 16⅔ to 50. Intermediate percentages between the low and high amounts will be worked out by the Federal officials in an exact rating of the financial standing of the various States.

It requires no further elaboration of the details of the legislation to prove that the Federal Government will be in complete control of activities which under our system of Government are the primary responsibility of the States, counties and municipalities. The system of dual sovereignties is completely destroyed with respect to these activities.

The entire program smacks of paternalism. It is proposed that the Government do for citizens what they have been accustomed to do for themselves. Such a program is not out of place in socialistic or fascist governments, but is in sharp contrast to the habits of individual initiative and self-reliance which have formed the basis of our system of free enterprise.

Our experience with relief programs in recent years has given everyone first hand evidence of the demoralizing effects of a paternalistic system. Provision for relief has been necessary, but it has been demonstrated conclusively that the dispensing of relief on too liberal a basis and without local responsibility for its cost is weakening the moral fiber of our citizens.

The testimony before the Senate subcommittee made it evident that the health program has been drafted on a basis far more liberal than can be justified by actual needs.

Health insurance figures prominently in the

program, although details as to the proposed State laws seem to be kept purposely in the background. While the Wagner bill says nothing about compulsory health insurance, there is no question but that it is in contemplation. It means that Federal bureaucracy will exert pressure upon the States to enact laws making this form of insurance compulsory to the same extent as unemployment insurance and old-age pensions. The model bill of the American Association for Social Security which has been introduced in many State legislatures provides for contributions from employers, insured employees and the State government, the three classes of contributions totaling 6 per cent of the wages of insured persons.

It is not strange that the American Medical Association has objected to health insurance with its regimentation of the medical profession to provide treatment in wholesale quantities to persons insured. The doctors are well aware that the treatment thus given in European countries which have health insurance is vastly inferior to that under our system of private practice, that the availability of health insurance in those countries has encouraged idleness of workers with minor ailments, that the medical statistics of such countries show that instead of improving the health of the people as a whole, the opposite has been true, and that far greater progress has been made in the United States without any system of subsidized medicine.

It has long been recognized that one of the greatest evils of a government bureaucracy is its tendency to perpetuate and expand its power. No more glaring instance of such a tendency has ever come to light than the movement for the adoption of the National Health Act. The program was drafted within the Federal bureaucracy with a singular disregard for the opinions of organizations of the professions most familiar with existing needs.

The original sponsors of the program were government officials and employees. The committee which presented the plan to the President was named by him and designated as the Interdepartmental Committee to Coordinate Health and Welfare Activities. Chiefly responsible for the details of the plan was a group known as the Technical Committee for Medical Care. The only members of this committee were employees of the Children's Bureau, the Social Security Board and the Public Health Service. The testimony before the Senate subcommittee shows that the American Medical Association, the American Dental Association and various organizations of other similar groups with a recognized standing were not consulted in the original framing of the program. The suggestions made subsequently by these groups when so-called conferences took place were completely ignored.

There is a mass of evidence before the subcommittee to show that many of the assertions with respect to the need for the legislation are erroneous. Sponsors of the program are accused of exaggerating the situation with respect to a present lack of adequate medical care. Spokesmen for religious as well as other groups which maintain hospitals testified that their capacity is greatly in excess of actual demands and that construction of public hospitals on the scale contemplated is unnecessary and would be injurious to existing institutions.

The public has become so accustomed to loose methods in the expenditure of public funds that proposals requiring annual expenditures running into the hundreds of millions no longer attract much attention. There is danger that sufficient consideration will not be given to the cost of the health program under the Wagner bill.

If nothing had been done to provide social security the situation would be different. A recent daily statement of the Treasury shows that during the fiscal years 1936, 1937, 1938, 1939 and 1940, up to the end of October, there had been collected by the Federal Government in taxes under the Social Security and Railroad Retirement Acts a grand total of almost two billions of dollars. In the same period grants to the States under the Social Security Board, the Public Health Service and the Children's Bureau, the three agencies named in the pending bill, amounted to nearly $925,000,000. Expenditures for the administration of the Social Security Act, the Railroad Retirement Act and the Railroad Unemployment Insurance Act in the same period amounted to about $75,000,000. Besides amounts raised from Federal taxes, the Treasury has had the custody of funds raised under State unemployment insurance laws amounting to an aggregate of about $2,135,000,-

000, about $1,400,000,000 of which remains on deposit in the form of investments in government securities.

Under the present Social Security Act it is expected that annual collections from Federal taxes for old age pensions alone eventually will approach two billions of dollars, or half the amount of all expenditures of the Federal Government.

The permanent obligations of this character which have been entered into by the Government aggregate an amount so huge that there is no present prospect of raising sufficient funds by taxation to avoid an annual deficit.

Not only do the ever-increasing expenditures for social and other purposes constitute a serious menace to the Budget, but any increase in taxation will aggravate further an excessive burden on the functioning of our economic institutions.

Congress in its recent amendments to the Social Security Act recognized that the payroll taxes were a factor in retarding business recovery. The effective dates of increased tax rates, the total of which will eventually be 9 per cent of the amount of payrolls, were deferred. It is obvious that additional payroll taxes in the States to finance health insurance, together with such financing methods as are used to raise the Federal Government's share of the cost, would be a further depressing influence on business tending to offset any benefits to the population as a whole.

In the face of the realities of the situation the proposal recently made by the trustees of the American Medical Association for the creation of a Federal health agency headed by a Secretary in the President's Cabinet or a Commission including competent physicians deserves consideration. The program suggested for coordination of health functions of the Federal Government, the appropriation of funds by Congress for allotment to such States as show actual needs in connection with the prevention of disease, promotion of health and the care of the sick, continuance of primary local responsibility for the public health, utilization of existing medical and hospital facilities to the utmost, continued development of the private practice of medicine and such expansion of public health and medical services as is consistent with the American system of democracy seems eminently sound.

Unless the American form of government is to be gradually broken down, the United States should not tolerate a socialization of medicine or the complete assumption by the Federal Government of responsibility for the public health at the expense of the sovereignty of the States. Congress should resist the movement sponsored by the Federal bureaucracy for the broadening of its powers under the terms of the so-called but misnamed National Health Act.

Omaha, Nebraska.

OPERATIVE FIXATION OF FRACTURE OF THE NECK OF THE FEMUR

W. J. Potts, M. D.

OAK PARK, ILLINOIS

We have gone through two eras in the treatment of fracture of the neck of the femur and are now in the third. Hopelessness marked the attitude of the physicians as well as the patient towards this fracture before the pioneering work of Royal Whitman. Under the indifferent treatment of the first era a successful outcome was a surprise rather than an anticipation. Whitman ushered in the second era with his abduction cast and intelligent care of the old and infirm patient. The medical profession universally recognized the rationale of his methods and brightened its attitude towards this problem fracture. However, the percentage of nonunion left much to be desired.

Aggressiveness has marked the present era since Smith-Petersen published his first report in 1931 on internal fixation of fractures of the neck of the femur with the three-flanged nail which bears his name. Sporadic attempts at operative fixation had been made earlier, but to him goes the credit of forcefully presenting and popularizing a method for its successful accomplishment.

With a view towards simplifying the technique of operative fixation skewers, nails, screws, wires and pins are being used today. Not a month goes by without reports of new methods of fixation and new gadgets for the simplification of technique. Perhaps there is the excessive enthusiasm which is apt to accompany the introduction of any new method of treatment. However, whereas a generation ago these fractures

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were approached with fear and trembling to-day they are attacked with gusto and seemingly with success.

This is a report of ten consecutive fractures of the neck of the femur treated by fixation with Austin Moore pins. Only those patients operated upon during 1937 are included in this report in order that near end-results may be presented. Up to 1937 the Whitman abduction cast was used routinely for these fractures with the following results: 20 per cent. mortality, 10 per cent. union, and 40 per cent. non-union. Austin Moore pins were chosen because they seemed simple and effective. The method of fixation is, I believe, immaterial so long as it is absolute and remains so until healing is complete. Operative fixation of a fracture of the neck of the femur is never easy. I am sure that the seasoned surgeon who is a beginner in this newly developed procedure (this of necessity includes most of us) will stumble into fewer pitfalls from which he cannot escape by using pins rather than the Smith-Petersen nail. This nail is ingenious, effective and deserving of no criticism, but it is not easy to put in.

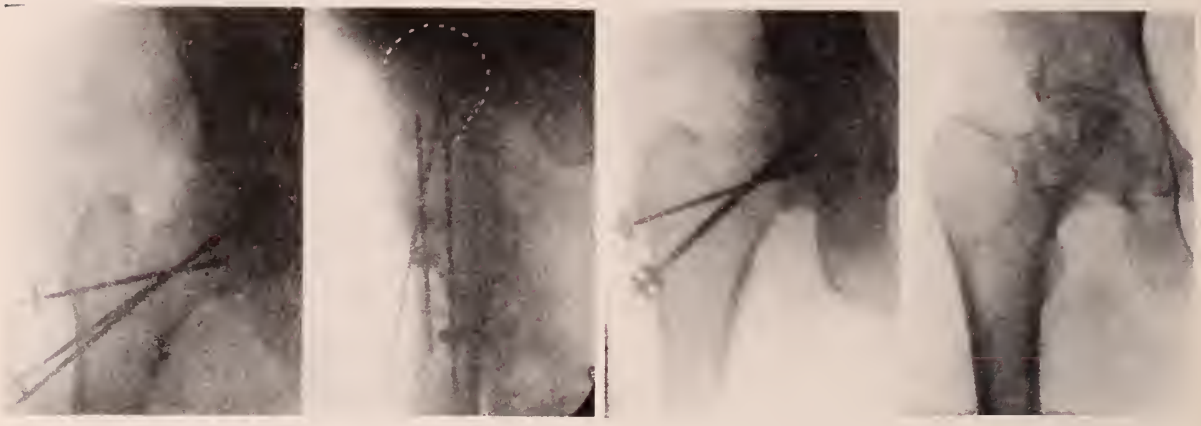


Fig. 1, a and b: X-rays made on operating table; c) appearance one month later; d) final result one year later.

GENERAL PROCEDURE

The injured patient is immediately hospitalized and given supportive treatment. The leg is put up in simple suspension-traction for three to five days to overcome muscle tension, relieve pain and allow for recovery from shock. For two nights before operation the skin about the hip is scrubbed with soap and water, alcohol and ether and covered with sterile towels. The morning of the operation 1/4 gr. morphine sulphate and 1/150 gr. atrophine sulphate are given hypodermically one hour before the operation. The Thomas splint and the weights are removed just before operation, but the mole skin is left on the leg for later traction.

OPERATIVE TECHNIQUE

At present two methods are being used.

First: For fractures in the mid portion of the neck or near the head of the femur.

The patient is placed on a regular operating table. Beneath the fractured hip a 1.5 inch deep box-like receiver open at each end is placed and into it an x-ray plate is inserted. Adhesive strips are attached to the edge of the plate to facilitate its removal later. A wide muslin gauze strip is put over pads in the perineum and tied to the head end of the table to provide stability when traction is necessary. A nurse or an orderly sits at the foot of the table to hold and manipulate the leg as directed. The operative field is painted with iodine which is washed off with alcohol. The patient is lightly anesthetized with nitrous oxide anesthesia.

The S-shaped skin incision begins just below the anterior superior spine of the ilium, extends downward about three inches, then laterally over the greater trochanter and downward over the shaft approximately three inches. The skin edges are carefully walled off with towels. The sartorius and rectus femoris muscles are retracted medially and the tensor fascia lata muscle is retracted laterally.

The capsule of the joint is opened by an incision parallel with the neck of the femur. Any

fibrous tissue strands are removed from between the fragments. The fractured surfaces are accurately aligned. The tensor fascia lata and vastus lateralis muscles are then split longitudinally exposing the lateral surface of the femur just below the greater trochanter. Three Austin Moore nails are tapped in with a hammer. (Fig. 1). On one pin a curved hemostat is clamped and on another a straight hemostat is clamped to facilitate identification of the pins on the x-ray plate. The wound is covered with a sterile sheet and antero-posterior and lateral roentgenographs are made (fig. 1). If the films show the pins in satisfactory position in both views, nuts are threaded on the pins to the shaft of the femur and the ends of the pins are cut off. The fragments are impacted. The capsule is loosely closed, the split muscles coapted, dead spaces obliterated and the skin closed with silk.

The patient is returned to bed where traction is reapplied until it is apparent that primary wound healing is taking place. As soon as the wound has healed a walking caliper is applied and the patient allowed to go home with the aid of crutches. Follow-up roentgenographs are made as necessary. When bony healing is complete, the nails are removed.

Second: The following technique is used for fractures at the base of the neck close to the trochanters. The preliminary care is the same. For the operation the patient is taken to the x-ray department and placed on a fluoroscopic table. Perineal pads and straps are used to hold the patient in the desired position. Under gas anesthesia the fracture is reduced by the Leadbetter method and the position checked by fluoroscopic examination. An assistant maintains the position by traction and internal rotation. A small incision is made below the greater trochanter and three Austin Moore pins are inserted under fluoroscopic control. Antero-posterior and lateral films are made as a final check on the position of the pins and of the fragments. Nuts are threaded on the pins, the ends cut off and the wound closed. Postoperative care is as outlined above.

RESULTS

The ages of these patients were as follows: 51, 78, 71, 55, 64, 62, 56, 49, 65, 88.

There were no postoperative deaths.

The only complication of note was one subcutaneous wound infection which cleared up promptly without any untoward result.

Six of the fractures were operated upon shortly after injury. Of these five are solidly united and one is a complete non-union.

Four patients were operated upon 6, 7, 8 and 12 weeks respectively following fracture. The first three have obtained solid union although in one patient bony solidification of the fragments did not appear until six months after the operative fixation. The fourth, a woman 72 years old, had a severe pneumonia and a stubborn pyelitis and cystitis during the three months she had been kept in traction following the intracapsular fracture of the neck of her left femur. The x-ray picture then showed that the head of the femur was dead. As her condition was too poor to warrant an attempt at a reconstructive type of operation three pins were inserted. Union of the fragments was not anticipated. Following the operation she was gotten out of bed and urged to get about with a walking caliper and crutches. She regained 30 pounds and is entirely free from pain. At the present time, 20 months following operative fixation, the pins are still in, the fragments are in good position, and there is some evidence of revitalization of the head. Whether union will eventually occur, or whether the head will slowly crumble time only will tell. At any rate, she has a painless hip and can get about independently.

OBSERVATIONS

1. Unless it is borne in mind that the head and neck of the femur point slightly anterior the pins may miss the head during insertion and project out of the posterior surface of the neck. Only by means of lateral as well as antero-posterior roentgen films can the position of the fragments be accurately checked.

2. After completing the insertion of the pins and attaching the nuts the projecting portion of the pins should be cut short. Long ends protruding into the muscles cause irritation, discomfort and collections of blood and serum in the soft tissues.

3. A long S-shaped skin incision, as described, is better than two incisions—one over the joint and the other over the trochanter—which were used originally. The single incision lessens the dangers of skin contamination by al-

lowing satisfactory walling off of the skin edges with towels.

4. It has frequently been emphasized and is again reiterated that the fragments should be nailed in a valgus position. The direct weight bearing line in this position keeps the fragments snugly against each other. In the varus position the shearing force tends to angulate and separate the fragments.

5. Intertrochanteric fractures may be pinned successfully. In many of these cases there is some fragmentation. Often the upper end of the lower fragment consists of only the thin outer shell of the greater trochanter. To avoid angulation which will occur if the pins are put into the neck through this thin cancellous portion of the greater trochanter it is necessary to start the pins low in the unyielding bone of the shaft of the femur and direct them upward into the neck at an acute angle.

6. The pins should not be removed before solid bony union has been demonstrated by x-ray.

CONCLUSIONS

Enough evidence has accumulated to conclude that operative fixation of intracapsular fracture of the neck of the femur in adults has the following definite advantages over fixation in the Whitman abduction cast:

1. *Absolute immobility*

This is essential for union in a slowly healing fracture and can be obtained only by operative fixation of the fragments. No matter how snugly a Whitman cast is applied it does not remain snug, especially on fat people. The slightest amount of motion of the fragments on each other promotes delayed or non-union. The percentage of union following operative fixation is about 30 per cent. higher than with treatment in the Whitman abduction cast.

2. *Economy*

A two-weeks' stay in the hospital compared with a three-months' stay means a great saving not only to the private patient, but also to the state for the care of indigent patients.

3. *Comfort and improved morale*

In November of 1936 I put on my last Whitman cast. The patient, a 73-year old woman, whined and cried the entire three months about her incarceration in the cast. Her nerves became shattered and all kinds of sedatives produced only frightening nightmares. After all of that suffering she had a non-union. The satisfaction of being up and about, independent, able to feed one's self and go to the bathroom is in itself so great as to justify operative fixation.

4. *Mortality*

Reports indicate the opposite of what was anticipated: The mortality is lower with operative fixation than with other forms of treatment. This is due to the extra freedom and activity allowed. Of course, the wave of enthusiasm for operation has not yet gained its height. Unless it is constantly borne in mind that the simplest operative procedures on these fragile old people are fraught with danger, the mortality figures will bring discredit on what seems to be a tremendous advance in the treatment of intracapsular fracture of the neck of the femur.

715 Lake Street.

DISCUSSION

Dr. James K. Stack, Chicago: I am sorry I did not have an opportunity to hear all Dr. Potts' paper, but I did hear the conclusions and I think perhaps they included the gist of his remarks.

The thing that impresses me and pleases me is that he prefers to open these hips to ascertain whether or not he has a good reduction. Dr. Magnuson has long felt that the x-ray, even when lateral as well as anteroposterior views are taken, is not adequate evidence. Many times on opening a hip after apparent satisfactory reduction has been obtained, spicules of bone have been found which prevented satisfactory union.

We have had the opportunity to use the Austin Moore method and the Smith-Petersen pin, and I am sure that Dr. Potts does not mean to make an issue of the method of internal fixation. It does not make any difference what is used, just so you get a good reduction and firm fixation. The incision he proposed today, like the one proposed by Cubbins, Callahan and Scudari, is adequate not only for viewing the position of the fragments but for inserting the pin, whether a flange pin or Smith-Petersen nail. It does not mean much more surgery to make such an incision than to make a long lateral incision on the thigh. I think he is to be congratulated.

There is one other point I would like to bring up, that is, in this present stage of popularity of internal fixation, we must not feel that all intracapsular fractures of the neck of the femur must be pinned, because that is not the case. Not all patients are intolerant of a Whitman cast nor of the walking cast

which Dr. Apfelbach is using at the County Hospital and Dr. Christopher at Evanston. The patient who has an impacted fracture in valgus position has had nature to do for him everything that the surgeon can do, and it is simply a question of biding time and a minimum of effort. A fracture through the subcapital area, impacted in valgus position, will many times confuse the medical students, because they will not see the typical external rotation of the leg, because the leg is impacted into the neck of the femur. So we get a good reliable Leadbetter test without first performing the Leadbetter maneuver. In such instances bed rest, until the pain subsides, then bearing weight, first with crutches and then at the end of six weeks or two months no crutches at all, is the best treatment provided there is no evidence of aseptic necrosis of the head of the femur.

ENDOCRINES IN RELATION TO GROWTH IN CHILDHOOD

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Physieal and mental growth depend in large part upon certain hormonal glands. There are, however, so many factors to be considered in the proeess of growth that one should show considerable eonservatism in assigning the whole function to any single factor.

(1) The vital elements of hereditary transmission are eontained in the chromosomes. The rate of lateral or linear growth and the eompleted arehitectural strueture of the mature individual are inherent in the chromosomes. Perhaps also mental aptitudes are transmitted through these agents.

(2) Unfavorable environmental conditions may alter normal growth and development. Among these faetors may be mentioned (a) reduetion of oxygen and nutritional material contained in the maternal blood supply; (b) toxic products transferred from the mother to the fetus, or exposure to deleterious conditions after birth; (c) acute or chronic infections of the fetus or the newborn infant; (d) excess or deficieney of the hormones required for normal growth.

(3) Cerebral aetivity is thought to influenee growth processes. Inflammatory foei, degenerative processes or neoplasms in the hypothalamus may cause obesity and transmit impulses through the autonomic nervous system to the pituitary gland, eausing hormonal dysfunction and growth disturbances. There is clinical evidenee that disease in the hypothalamus may influenee the specific secretions of the pituitary gland. An example of hypothalamie dysfunction is the eondition known as dystrophia adiposogenitalis, or Fröhlieh's syndrome, in whieh obesity, sexual infantilism, increased sugar tolerance and mental hebetude may oecur. Recent studies incline to the view that Fröhlieh's syndrome is caused by a lesion in the hypothalamus, rather than by primary dysfunction or disease of the pituitary gland. Abnormal adiposity oceurs in certain hypothalamic disorders which are not associated with any demonstrable involvement of the pituitary gland.

(4) Interrelationships between various endoerine systems certainly exist. For example, it is assumed that there is an intimate relationship between pituitary and thyroid. However, the finer details of endocrine interaction are not definitely known.

(5) Defeetive nutrition due to infeetions or disturbances of metabolism may affect growth adversely. It is recognized that congenital heart disease, dysfunction of the liver, interstitial nephritis, tuberculosis, syphilis and other acute and chronic infections may retard growth.

(6) A defieiency of vitamins may retard growth.

A hormone may be defined as a ehemical substance produced in an organ which under normal conditions, being carried to another organ by the blood stream, excites in the latter organ some form of functional aetivity.

The effect of hormones on the growth and development of the fetus is an interesting point in our discussion. During the period when the fetus is growing most rapidly, the internal secretory glands are not yet functioning. In the later months of intrauterine life some of the endocrine glands begin to seerete the aetive principle in minimal amounts. Numerous observations support the view that the mother is supplying the hormones required for fetal growth. It is believed that infants in utero store up in their bodies growth hormones derived from the mother. For example, an infant destined to show clinical evidence of hypothyroidism does not usually present symptoms at birth. It is only later when the stored up aetive prineiple of

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the thyroid gland derived from the mother has been exhausted that manifestations of hypothyroidism appear.

Sex hormones are found in the newborn infant which are undoubtedly of maternal origin. It is supposed that they give rise to the so-called "pregnancy reactions." Ovarial and anterior pituitary hormones have been found in the urine of newborn babies until the fourth or fifth day after birth. Pregnancy reactions occur in both sexes. In the female infant these reactions are made manifest by the edematous, spongy and hyperemic vagina and vulva. In addition, the labia are swollen and there may be a discharge of bloody mucus. Pregnancy reactions in newborn male infants are said to be manifested by the discharge of small blood clots from the urethra. Hematuria has been observed, thought to be due to a hyperemic state of the prostate gland. Temporary hydrocele and enlarged testes are sometimes observed. The mammary glands enlarge in both sexes after birth. Von Jaschke believed that 95 per cent. of newborn infants secrete milk. It has been thought that the milk secretion ceases when the sex hormones are eliminated from the infant's body.

It has been assumed also that the hormones which produce the reactions of pregnancy above cited are derived from the estrin of the human placenta. Estrin, an ovary-stimulating principle, has an action similar to the gonadotropic principle of the anterior pituitary lobe.

Relation of Vitamins to Hormones. There is such a mass of evidence at hand to prove that vitamins are necessary factors for growth that one is led to inquire what is the specific effect of each on growth and what relationship, if any, exists between vitamins and hormones. The following assumptions may be stated:

Vitamin B deficiency may cause colloid goiter in rats. Sure and Buchanan found that pure crystalline vitamin B given to albino rats is antithyrogenic. Sure also found that vitamin A deficiency caused a 40 per cent. weight increase in the pancreas, and that in vitamin B_1 deficiency marked hypertrophy of the thyroid and adrenals, and hypertrophy of the pituitary, occurred. On the other hand, avitaminosis caused a marked atrophy of the thymus; this is particularly true of vitamin B_1 deficency.

Certain vitamins are prepared by synthetic processes in the body and are thus made available for nutritional purposes. Vitamin A is formed in the liver by the splitting of carotene. In the performance of this function does the liver become a hormonal gland? Under the influence of ultraviolet rays, vitamin D is formed in the skin.

Attention has been called to the fact that the same substance may act as a vitamin in one species and as a hormone in others. Vitamin C is ingested with food by man, monkeys, guinea pigs and rabbits (and is thus a vitamin), but is synthesized in the bodies of chicks, rats, mice, dogs and various other animals, resembling the production of hormones.

Animals deprived of vitamin A cease to grow. It is not known whether the vitamin bears any relation to the pituitary hormone which regulates growth.

Similarly, infants may be retarded in growth when the administration of vitamin B is deficient. A sufficient supply of B_2 especially favors growth. Vitamin C is also said to stimulate growth. Rickets due to vitamin D deficiency may lead to deformities of the spine or lower extremities, eventually causing diminution of stature.

Internal Secretion and Growth. The endocrine glands of infancy and childhood are of fundamental influence on growth processes. The glands which have to do with growth and development are the hypophysis, thyroid, the suprarenal gland, the pineal gland and the thymus. The parathyroid glands and the pancreas are more indirectly concerned in the growth process.

The Pituitary Gland (Hypophysis). It has been said that the chief function of the pituitary is not only to produce its own hormones but also to regulate the production of hormones in other endocrine glands. The hormones of the anterior lobe of the hypophysis influence skeletal growth. Acromegaly, gigantism and dwarfism are clinical conditions depending upon dysfunction of the pituitary gland. The removal of the anterior lobe of the pituitary in tadpoles caused retardation in growth and failure to undergo normal metamorphosis. Evans and Long proved that the anterior lobe produced growth-promoting hormones. They obtained a saline or alkaline extract of this active principle. This extract, injected intraperitoneally into young rats caused

striking increase in growth. Animals so treated attained twice the size of their litter mates. Giant rats can be produced by the injection of the saline extract of the anterior lobe. Injection of this hormone into hypophysectomized animals produced normal growth processes. Evans isolated a purified white powder from the saline extract, the injection of which caused regular increase of growth in female rats. Recent investigations have suggested that growth is not caused by a single hormone but by the combined action of several substances obtained from the anterior lobe. The results of the treatment seem better when the anterior lobe extracts are not fractionated too highly.

Acromegaly. Overactivity of the anterior lobe may produce acromegaly, a condition occurring mostly in adult life, characterized by overgrowth of the bones of the hands, feet and face. In true acromegaly an adenomatous tumor composed of acidophyl cells is found in the anterior lobe. The disease is rarely found in children, though if it does occur, the stature is enormously increased. However, after the epiphyses have united, further growth in height is no longer possible.

Gigantism. This condition is due to a pituitary lesion similar to that which occurs in acromegaly, but gigantism occurs in children when the epiphyses are ununited. Such patients become abnormally tall and the limbs are excessively long.

Dwarfism: If hypophysectomy is performed on a rat or dog, dwarfism is observed in the young animal, though in the adult animal a general cachexia occurs, producing a condition resembling so-called Simmonds disease. Deficient production of the anterior growth hormone in the human leads to arrest of growth. One group of miniature individuals is known as the Lorain type of dwarf, and is one of the best examples of hypopituitarism without obese tendencies. As a rule, the limbs are proportionate to the body, and they are symmetrical. The bony structure is light and sexual development is retarded. This type of dwarf is usually of normal intelligence and the appearance and facial expression are not unattractive. In some the head is relatively large in proportion to the body.

The dwarfism which results from hypothyroidism will be mentioned later. Aside from the endocrine factors in growth retardation, there are other causes of dwarfism not related to hormonal action. Among these may be mentioned achondoplasia or chondrodystrophy, and inflammatory or degenerative disease of bones, as well as the deformities of rickets, osteogenesis imperfecta, and Pott's disease. These latter conditions result in a reduction in stature, though maturation is not, as a rule, affected. Dwarfism may also occur in celiac disease, manifested by chronic intestinal indigestion, osteoporosis and delayed growth of bone. There is retardation of growth in so-called renal rickets, which is a condition manifested by softening of the bones and rachitic-like deformities associated with chronic renal insufficiency due to double hydronephrosis, congenital cystic kidneys or chronic interstitial nephritis.

Treatment of Growth Disturbances Due to Anterior Lobe Pituitary Dysfunction. Pituitary dwarfism should be treated early, before the epiphyses are sealed. It is not easy to determine at an early age whether a baby is simply retarded in growth because of nutritional disturbances, or whether the condition is due to a glandular deficiency. There are a number of anterior pituitary growth hormone preparations furnished by the bio-chemical manufacturers. The oral administration of these hormones is usually ineffective. They should be given hypodermically, preferably in doses of 1 to 2 cc. daily, or on alternate days. There is clinical evidence at hand indicating that the growth-stimulating preparations are potent in stimulating growth in experimental animals and in humans. In addition to the specific treatment an adequate diet should be supplied, including concentrated vitamins of A and D and vitamin B_1 and the vitamin B complex.

The Thyroid Gland. When the thyroid is completely removed in young rabbits, it is found that growth is retarded, the animals remain small, they may develop deformities of the front feet and curvatures of the spine, they become drowsy and disinclined to move. The heart rate is slow, the blood pressure is low, and the basal metabolism is decreased. The same results are obtained in other animals. In the human, thyroid insufficiency leads to diminished metabolism and retardation of physical and mental growth and development. Some of the conspicuous changes noted in childhood are the

peculiar swollen appearance of the skin, which is also dry and cold and sallow or yellow in color. The nails and teeth are brittle, perspiration does not occur readily, the hair is coarse and short and tends to fall out, the body temperature is usually below normal, the teeth erupt slowly and decay early, obstinate constipation is frequent, anemia is usually present, the voice is inclined to be hoarse and husky. Apathy and low intelligence are observed and growth is retarded. Few of these patients attain normal stature.

R. G. Hoskins remarks that a moderate degree of thyroid insufficiency is fairly common, but is frequently overlooked. He thinks that in these children mental alertness and intelligence are frequently below the normal level. In children in whom deficiency is present, x-ray pictures of the bones show that there is lack of growth at the epiphyseal junctions, and great delay in the development of the centers of ossification. The appearance of the nuclei of the carpal and tarsal bones may be delayed until the tenth year, and the epiphyses of the long bones may not unite until the twentieth or thirtieth year. This condition is treated by the administration of the dried thyroid gland substance. The required dosage can not be stated for each individual, though one should start with minimal daily doses, the size of which should be slowly and cautiously increased, until an effect is obtained. It is far from desirable to give a dosage sufficient to produce the full physiological effect. The size of the dose should be diminished, if restlessness and increased pulse rate occur. Continued overdosage may cause thyrotoxicosis. The cretin or the hypothyroid individual requires constant observation and treatment throughout life.

The Thymus. Gudernatsch fed tadpoles with thymus gland substance and found that these larvae grew faster than those controls fed on a usual meat and vegetable diet. Those that were fed thymus gland remained in the tadpole stage for a shorter time than those fed the usual diet. Later he fed rats on thymus substance and found that the successive generations showed an increase in the rate of growth, improvement in vitality and longer life spans. Leon Asher in 1915 obtained a water-soluble extract from the thymus gland which he called thymocresine. When this substance was injected into rats, acceleration of growth was observed.

Rowntree, Clark and Steinberg used an extract prepared from the calf thymus by Hansen (1930). They found that, if this substance was injected into rats, the third generation of these animals showed an increased rate of growth, which was further accelerated in succeeding generations. The experimental work on the thymus thus far has been performed on small animals, though as is frequently the case, results thus obtained cannot be literally translated into pharmacological reactions in the human being. In a few instances thymic tumors seem to have caused precocious growth and development.

The Pineal Gland. Rowntree and his associates experimented with an extract of pineal gland prepared by Hansen. It was shown that, if the substance was injected into rats, these animals became more dwarfed each succeeding generation. These experiments do not as yet clarify the function of pineal gland activities in man.

The Pancreas. It was formerly thought that a diabetic child on a well-controlled diet either grew normally or slightly in excess of the average rate. Julian D. Boyd and A. H. Kantrow believe that retardation of growth in children due to diabetes may be prevented or corrected, if glycosuria is suitably controlled by the administration of insulin and the diet properly regulated.

The Adrenal Glands. Hypersecretion of the adrenal cortex may produce stimulation of the sex glands, or possibly influence the anterior pituitary primarily, and the sex glands secondarily. Hypersecretion, particularly of the cortical substance, may produce abnormal hairiness, increase of subcutaneous fat, increased thickness of the upper layers of the skin and enlargement of the sex glands. Hypersecretion of the adrenal cortex tends to stimulate bodily growth and produce individuals of large stature, and with strong, well-developed muscles. These persons are usually very alert and mentally precocious. The male child may show increase in the size of the sex organs, whereas the female may show large breasts and excessive growth of hair, and menstruation may occur very early. Aside from the treatment of Addison's disease with extracts from the cortical substance of the gland, it has been suggested that these extracts may also be

administered to those suffering from hyporenal dysfunction, such as is noticed particularly in the severe prostration associated with diphtheria, pneumonia, surgical or traumatic shock, or peripheral vascular failure. However, the diagnosis of hypoadrenia may be difficult, and the administration of these remedies is more empirical and speculative than of proven value. The therapeutic use of epinephrine and its pharmacologic action as a vascular stimulant are well known.

The attempt has been made to review briefly some of the important facts in the relation of hormones to bodily growth and development. The therapeutic value of a few of these hormonal remedies has been proved to be effective in the treatment of some clinical conditions in man. Treatment with other hormonal extracts is still in an experimental stage. Progress in the study of substances derived from endocrine glands is proceeding rapidly, and we may confidently expect that new and important revelations concerning their isolation and therapeutic application will be discovered in the course of time.

THE TREATMENT OF POSTENCEPHALITIS, ESPECIALLY OCULOGYRIC CRISES

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HISTORICAL NOTE:

Encephalitides of various types have occurred and have been known to the medical profession for centuries. The case of a "maiden" who fell into continued fever with headache, dryness of the mouth and tendencies to sleep that S. E. Jelliffe[1] found in the literature dating back to 1695; ophthalmoplegic disturbances associated with the influenza epidemic of 1712; the cases seen by Jelliffe in 1890 and by Browning[2] in 1906 were most likely manifestations of the entity which to us has come to be known as encephalitis lethargica, epidemic encephalitis or Economo's disease after the late Baron Constantin Von Economo (1876-1931),[3] who in the pandemic of the winter of 1916-1917 which plagued central Europe, studied it and described it carefully. Since then, this malady has visited practically every known spot of the globe and, though masked, has retained enough of its identity to be recognized as encephalitis lethargica.

The causative agent has to this day remained one of the great enigmas of medicine. At best, we have only several conjectures as to its identity. The onset of the disease or, more correctly speaking, of the acute stage of this disease may be very stormy with a symptom-complex of fever, somnolence and ophthalmoplegias, or may pass unnoticed as a "common cold" only to be recognized later by a chain of tragically disabling sequelae. Authorities[4,5,6,7] agree that between 20 to 40 per cent of those afflicted with this disease succumb to it during the acute stage, while fully 60 to 70 per cent. become incapacitated in one form or another, for the rest of their lives, during the so-called postencephalitic or chronic stage of this disease. "If its acute stage chastizes us with whips," says A. J. Hall,[8] "truly its chronic stage chastizes us with scorpions."

We commonly think of the postencephalitic disturbances as belonging to either disorders of behavior, mobility or those of sleep.[8] So complex has the picture of the postencephalitic stage become, that it is probably rivaled in its bizarre manifestations only by lues.

One of the most troublesome and perplexing of the sequelae we encounter at present, is that variously known as "Blick Krämpfe," "Schauanfall," "Spasme oculaire de fonction," "crise oculo-gyre," "Tonic Eye Fits," "Oculor Spasm" and "Forced Upward Conjugate Deviation of the Eyes."

This condition "occurs most frequently, if not exclusively, in the Parkinsonion syndrome of epidemic encephalitis."[8,9,12]

It was L. B. Hohman[10] who, in 1925, first called our attention to this condition in this country. About three years previously, the German authors had already encountered this disturbance. Since then a voluminous literature grew up, dealing mainly with the description of the attacks, the frequency of occurrence and attempts at explanation of the pathology and mechanism of its production. It is interesting to note that by 1929 Jelliffe had already found reports of 200 cases.[1] A rarity at first, this condition is becoming more and more common. From three to five per cent. of the posten-

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cephalitic Parkinsonians in the early twenties of this century having oculogyric crises,[1] the incidence steadily increased to 15 per cent.,[11] 17 per cent.,[12] 20 per cent.[8] and even higher.[13] At the Dixon State Hospital, I found 55 postencephalitic patients, 41 males and 14 females, of whom 24 (17 males and 7 females) or 43.6 per cent. are oculogyrics.

MECHANISM OF OCULOGYRIC ATTACKS:

In reviewing the literature dealing with oculogyric crises one readily becomes convinced of the lack of actual knowledge of the mechanics involved in the production of these phenomena.

Theories explaining the occurrence of oculogyric manifestations place the lesions at important centers known to be associated with or located near the center for ocular movements.

The earliest and perhaps most known theory is that of Release of Cortical Inhibitions. McCowan and Cook in their interesting paper[12] on oculogyric crises argue, that the exhibitions of abnormal behavior encountered in the postencephalitic, support the thesis that a diminution in the cortical inhibitions is the mechanism of their production. Likewise, they contend, that the "lesion responsible for the crises does not lie in the lower centers for conjugate deviation but in the associational centers or paths leading to them." They would, therefore, have us believe that "psychogenic factors are of very minor importance in originating the phenomena under discussion, which must be regarded as due to definite lesions of the ocular nervous apparatus." Whittington[14] agrees with this conception and states that "In this disease the midbrain, particularly the substantia nigra and the corpus striatum, closely connected by the strionigral tract shows most signs of the disease and so, the connecting links for central control over the extrapyramidal system are affected." Marinesco and Draganesco[15] found these areas to be atrophic and the pigment cells replaced by glial tissue, in two of their oculogyrics who have come to post having died as a result of an intercurrent infection.

To explain the intermittent character of these attacks Cheney and Martins[16] offer the suggestion that they may be dependent upon altered metabolism, toxic products or cerebrovascular spasm.

Muskens[17] placed the lesion in front of the posterior commissure because of the frequent association of tonic lateral positions with the upward or downward positions of the eyes. The tracts involved in moving the eyes are said to be close together only at this point. If it is true that there exists a segmental arrangement of muscles in the pallidum and striatum, it would appear that any involvement of the supravestibular pathways said to have a tonic effect on the pallidum, would release control of that portion of the pallidum controlling the movements of head and eyes.[18] The attacks then could be precipitated by suggestion, excitement, fatigue, etc.

Some authors believe these ocular spasms to be epileptoid, and assume that an irritation of the meninges about the second frontal convolution, which is supposed to be close to a center of ocular movements, precipitates these spasms. The objections to this theory, as enumerated by Shapiro,[18] are: "The conjugate deviations due to cortical irritations as seen in man are practically always horizontal, while those which occur during oculogyric crises are generally vertical or oblique; that oculogyric crises can be brought on at times by various emotional factors or by suggestions, which is not the case with epileptoid seizures."

Hall[8] visualizes the oculogyric attacks as manifestations of the eye muscles being in a state of rest rather than spasm. "So long as the eyes are open, the extrinsic muscles are in a certain state of tone which keeps them always adjusted for binocular vision and prevents them from being moved in any direction beyond the point at which the pupils are just clear of the lids. . . (but) When the lids are closed, as in sleep, this tone in the muscle is relaxed, the eyes are no longer adjusted for binocular vision and they wander upwards behind the lids."

In his extensive papers on postencephalitis, Jelliffe[1] considers the oculogyric crises as compulsive manifestations on a "Somatic Substratum." His opinion is shared by other authors,[13] even though no anatomicopathologic basis for oculogyric crises has been found in the several recorded postmortem examinations.[15] The pathological changes in the central nervous system is in all essentials the same as in those postencephalitics who had no ocular manifestations.

TREATMENT OF OCULOGYRIC CRISES.

Dr. Neal[7] has justly stated that the U.S.P. has been exhausted in the search for a drug in the treatment of the acute state of epidemic encephalitis. For the treatment of the postencephalitic stage, not only the U.S.P. but many other sources have been exhausted. Everything from sedative, stimulant, serotherapy to psychotherapy,[7,11] has been tried. The success of all these therapeutic measures can best be evaluated by the fact that many investigations in search for an effective treatment are still in progress.

One of the first effective drugs to be used in the chronic stage, I believe, was stramonium. Juster[19] suggested it and it was first used in this country by Shapiro in 1926,[19] by Jacobson and Eppelen, at the Cook County Hospital in Chicago, in 1929,[19] and reported on favorably again by Cheney and Martins in 1930.[16]

The drug in its various forms produces effective somatic relief, the tremor lessens, and "eye seizures" decrease in number and severity. It lessens the mental lethargy and it may produce some effect on the cortical inhibitory mechanism, increasing its function.[16,19] The other effective drugs used were hyoscine[12] and atropine.[20] These drugs are members of the belladonna group, and as is well known are effective parasympathetic paralyzents.

Since many of the symptoms of epidemic encephalitis are due to an irritation of the parasympathetic system,[21] it was thought advisable to enhance the effect of these parasympathetic paralyzents by the addition of sympathomimetic drugs. And so, recently, reports of excellent results with such preparations have been forthcoming. In their comparison of two such drugs, ephedrine and benzedrine, (benzyl methyl carbinamine), Prinzmetal and Bloomberg[22] found the second to be about three times as effective as the first. While it is known that benzedrine stimulates the sympathetic system, the method by which this effect is produced and the part of the central nervous system affected is unknown.[23]

Finkelman and Shapiro;[21] Solomon, Mitchell and Prinzmetal;[24] Davis and Stewart,[25] have tried this preparation on their respective groups of postencephalitic patients with favorable results, the most striking of which was the effect on the group afflicted with oculogyric crises. Their number of patients with oculogyric symptoms was, however, small in comparison with twenty-four such cases at the Dixon State Hospital.

Because of their encouraging results, I set out to compare the effects of this drug* with those used at the Dixon State Hospital.

To start with, I believed that here we, at last, had found a remedy that will, if not cure, at least give these patients prolonged relief from these tormenting ocular spasms. To my disappointment, I soon learned that the oculogyric manifestation is but one of a complex syndrome and that it cannot be treated individually, but that the whole syndrome, the patient, must be treated, and that, the syndrome is of a nature that will not respond to sympathomimetic drugs alone.

These twenty-four patients have previously been treated with tincture of stramonium and hyoscine hydrobromide. They were slowly taken off these treatments, as suggested by Dr. Neal,[7] and observed without medication. For humane reasons, this period could not be extended over nine days. The majority of the patients became helpless, bedridden and suffered agony beyond description. Their tremors, myasthenia, sialorrhea, dysarthria, dysphagia, rigidity and their ocular spasms became unendurably severe without drugs.

With nine days as the unit time of observation, I have carefully observed the effects of benzedrine sulfate in doses of from 30 to 80 mg., atropine sulfate in doses of gr. 1/150 from b.i.d. to q.i.d., hyoscine hydrobromide grs. 1/100 from b.i.d. to q.i.d., tr. of stramonium in doses of from 3 to 7 drachms per day, and all these in combination with benzedrine sulfate. The number and duration of each "eye seizure" of each patient, the time of the day, the possible precipitating factor, the general behavior before, during and after the attack, was recorded. The findings are similar to those recorded in the literature;[26] namely, that most "seizures" occurred in the afternoon and evening hours, after a fatiguing task, such as continued reading, card playing, walking, wrestling, a lengthy moving picture, and especially emotional distresses, such as bad news from home, accusations of dishonesty, punishments and the like. Moroseness, crying, swearing and temper tantrums are the usual

*Benzedrine sulfate, as well as all other medications used in this observation, were very generously supplied to me by Mr. W. F. Thompson of the Smith, Kline & French Co., Philadelphia, Pennsylvania.

reactions of these patients prior to, during and after the "attacks." In some cases these symptoms assume the nature of an "aura" occurring in a similar pattern prior to each episode.

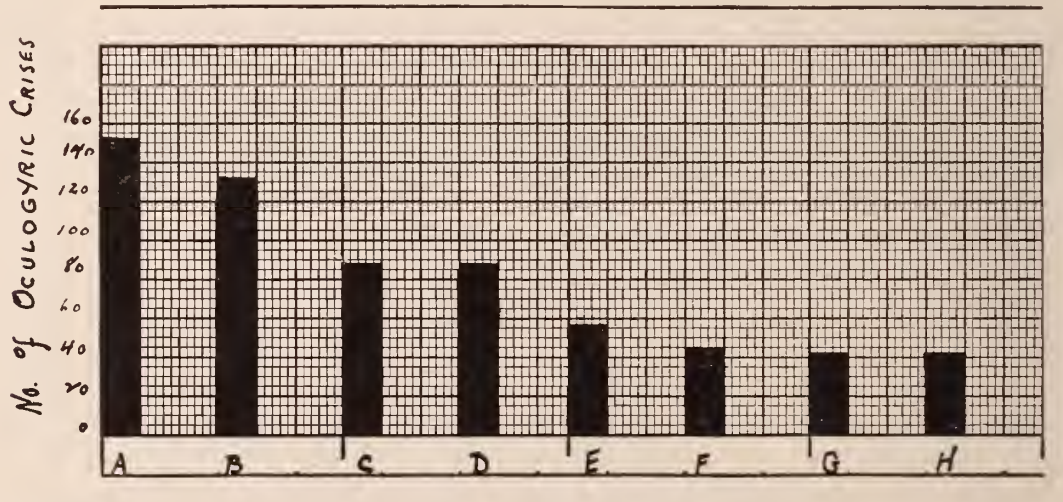
TABLE SHOWING THE FREQUENCY OF OCULOGYRIC CRISES FOR EACH CASE IN RESPONSE TO VARIOUS DRUGS

	A*	B	C	D	E	F	G	H
Case 1—S. M.	7	11	4	8	2	1	2	2
Case 2—O. N.	8	7	5	12	3	5	7	2
Case 3—F. C.	6	4	1	1	0	2	1	1
Case 4—J. K.	9	18	10	4	5	7	5	4
Case 5—J. Z.	14	22	11	11	2	2	3	2
Case 6—A. H.	1	2	2	0	1	0	0	0
Case 7—J. K.	1	4	2	2	1	0	0	2
Case 8—C. B.	7	4	0	2	1	2	1	2
Case 9—R. K.	11	2	8	2	1	5	1	2
Case 10—F. P.	4	3	1	2	1	0	3	2
Case 11—C. K.	1	3	2	2	2	2	2	3
Case 12—H. C.	5	3	7	3	4	3	1	2
Case 13—E. N.	7	4	1	4	1	2	1	2
Case 14—J. P.	0	1	0	2	2	1	2	2
Case 15—S. G.	3	2	0	5	0	2	0	0
Case 16—R. P.	13	5	1	2	2	2	1	1
Case 17—J. P.	4	5	3	6	3	2	3	2
Case 18—M. L.	11	3	12	4	4	2	1	3
Case 19—G. H.	6	4	3	2	3	1	1	3
Case 20—J. G.	2	2	4	3	3	1	2	1
Case 21—G. P.	12	7	0	1	2	0	1	0
Case 22—R. H.	7	7	3	6	6	3	3	3
Case 23—E. K.	14	6	4	3	1	0	2	1
Case 24—A. S.	9	0	4		6**			

*Refer to legend below diagram.
**Dropped from observation; see case history.

whole group for a period of nine days with each drug. The columns representing hyoscine hydrobromide plus benzedrine sulfate and tincture of stramonium plus benzedrine sulfate are the averages of three nine-day periods in each case. The columns representing tincture of stramonium and tincture of stramonium plus benzedrine sulfate are of the same height, representing 42 and 42 seizures, respectively, and would give the impression of similar results. In reality, however, the patients are very much happier when to tincture of stramonium benzedrine sulfate is added, for—as said before—the oculogyric crises are not their only tormenting symptoms. Benzedrine sulfate, a non-toxic drug,[23] seems to have a very marked effect on myasthenia, lethargy and general depression, and in combination with tincture of stramonium, which in this group of patients, at least, has a temporary effect on their rigidity, tremors, dysphagia, dysarthria, etc., is the most effective combination in the treatment of postencephalitis and especially oculogyric crises. It is of interest to note that as the number of seizures decreases from no medication to the best combination, the duration of each seizure increases. The relationship of frequency to duration of each seizure is not clear. Longer periods of observation may disclose it.

DIAGRAM SHOWING THE TOTAL NUMBER OF OCULOGYRIC CRISES FOR THE WHOLE GROUP IN RESPONSE TO VARIOUS DRUGS.



A—No medication.
B—Atropine sulfate.
C—Benzedrine sulfate.
D—Combination of atropine sulfate and benzedrine sulfate.
E—Hyoscine hydrobromide.
F—Combination of hyoscine bydrobromide and benzedrine sulfate.
G—Tincture of stramonium.
H—Combination of tincture of stramonium and benzedrine sulfate.

The table and diagram above represent the comparative effects of the previously enumerated drugs on oculogyric crises, and show the number of such attacks for each patient and for the

SUMMARY AND CONCLUSIONS

1. Encephalitis of epidemic proportions with its peculiar sequelae has been known before 1918, but to Economo goes the honor of having studied and identified it as an entity.

2. Oculogyric crisis, one of the sequelae of a complex syndrome of postencephalitis, has probably never been seen in any other disease.

3. The exact mechanism of its production is as yet a matter of speculation, as no definite anatomicopathologic basis has been discovered.

4. Oculogyric crisis, because it is a part of a complex syndrome, must be treated with the syndrome; efforts to treat it alone fail.

5. At present the most effective drugs in the treatment of postencephalitis, especially oculogyric crises, are the belladonna group of drugs of which tr. of stramonium is the most, and atropine sulfate the least efficacious.

6. Benzedrine sulfate is not a specific drug in the treatment of oculogyric crises, but gives definite relief of the associated symptoms of lethargy, narcolepsy and depression, when used in combination with tr. of stramonium.

7. Out of the twenty-four patients observed, nineteen showed a definite decrease in the frequency and severity of oculogyric crises, rigidity, myasthenia, sialorrhea, dysphagia, dysarthria, lethargy, narcolepsy and depression, in response to a combination of tr. of stramonium and benzedrine sulfate. Three patients showed similar response to a combination of hyoscine hydrobromide and benzedrine sulfate and two patients remained uneffected by any of the drugs used.

CASE HISTORIES

Case 1.— S. M., 31 years old; American male of Italian parentage. Had influenza in 1918 and remembers "having seen double." When he recovered and returned to school he was fitted with glasses. From 1918 to 1932 he enjoyed good health. He finished grade school and found gainful employment in several industries; always working hard. In 1932, during his grandfather's fatal illness, he noticed a slowing "stickiness" in his movements, slight "shaking" and "fading" of his voice. In the same year following his mother's death, he was "scared to death" by his first experience of "upward turning of the eyes, and I had a feeling I was going blind." He states that for about twenty minutes "everything went blind." He could hear everything. He also answered questions, but he could not bring his eyes down, "hard as I tried." He continued to get these eye spells every night, particularly in the midst of an exciting "crap game." His condition became worse by 1934. His left half of the body "felt like paralyzed, dragging along, and everybody asked me about my voice, my left arm, my left leg, and why I continued to shake. Sleep would come over me every few hours and I could not keep awake." He never came to the attention of the police as a result of behavior disorders.

He was admitted to Dixon State Hospital on October 10, 1938, after having consulted several clinics. He was at the time helpless, unable to feed and dress himself. He presented a typical post-encephalitic Parkinsonian picture, with a very marked "washed out" facies and "blank gaze." Physical examination revealed nothing unusual. Serology tests were negative. I. Q. .79. He was put on the regimen described and soon began to show improvement. His mobility became free, the mask-like facies brightened, his voice cleared and is of a higher pitch. He not only helps himself, but helps with the work about the cottage. He is not sleepy during the day. He plays ball and says he feels better than ever before. He responds best to tr. of stramonium, drachm once t.i.d. and benzedrine sulfate 10 mgs. t.i.d.*

Case 2.—O. N., 29 years old; Italian laborer. Has had only measles and whooping cough. At 13 years of age he was struck on the head, remained unconscious and was taken to the hospital where he remained for one week with "high fever." For a number of weeks afterward he "saw double." He sustained another head injury at 21 when he fell off a ladder. About one year following the second injury he began to feel "weak," tremble, "and things were not just right." Many doctors were consulted but none apparently recognized the condition. In August of 1935, he was admitted to Dixon State Hospital where, on examination, he was found to have a congenital shortening of the left arm with a partial ankylosis of the elbow, as a result of his second injury. He was slightly stooped, exhibited a coarse tremor of the extremities, open mouth, salivation, masked facies and slurring speech. His eyes "turned up" for the first time in 1932, while at work in a paper mill. He suffered much as these "eye spells" would come on every day in the afternoon. Following the attacks he would fall asleep. He experienced dizziness a few minutes prior to the attack. Many times he can off-set an attack by concentrating "his will against it." During the attack he can bring his eyes down and keep them down as long as he thinks of the attack, but should this attention wander away his eyes "jump back."

Physical examination at present reveals essentially the same findings, negative Wasserman and I.Q. of .79. He is composed and of good behavior.

The diagnosis in this institution was that of a post-encephalitic syndrome. Tr. of stramonium gave him relief of his tremors, somnolence and decreased the number of spells. The addition of 70 mgs. of benzedrine sulfate to one drachm of tr. stramonium q.i.d., gives this patient complete relief of drowsiness, increases his well-being and very markedly decreases the number of eye spells.

*In each case refer to the table for comparative effects of the drugs used.

Case 3.—F. C., white male, 31 years of age. Mumps at seven and measles (?) at 19. In 1922 he was laid up with chills and high temperature for four days. He did not see double and was not incapacitated. In 1925 he suddenly developed a "weakness" in both upper and lower extremities with an "unsteadiness"; "shaking" set in soon after. The first "eye-spells" came about three months after, associated with difficulty in swallowing. At about the same time he began to exhibit delinquent tendencies and was sent to St. Charles School for Boys. After one year there, he was transferred to Lincoln School and Colony where he spent three years and transferred to Dixon State Hospital in April of 1928. Here he presented the picture of postencephalitis with a marked somnolence.

On examination, at present he is found to have a coarse tremor of the right upper and lower extremities, open mouth and drooling; his body is erect and stiff. The gait is cautious and shuffling. Reflexes are sluggish, serology negative, speech is slow, monotonous and thick.

He gets most relief from tr. of stramonium in moderately large doses and is helped subjectively, especially of lethargy, by the addition of benzedrine sulfate.

Case 4.—J. K., 24-year old white male. Normal development up until 1924, at which time he was treated at Sarah Morris Hospital for "sleeping sickness." In the same year, he was cared for at the Cook County Hospital for an acute suppurative otitis media and erysipelas. Soon after his recovery he began to exhibit delinquent tendencies, as a result of which, he was committed to several state institutions.

To Dixon State Hospital he came in January of 1928. His stay here has been very stormy and typically compulsive. Here he presented rhythmic tremors bilaterally, open mouth, staring gaze, giving a statuesque impression, speech thick and monotonous. His eye seizures were recognized as those of oculogyric crises type.

In October of 1937, he developed "an ulceration of the right tonsil." A few weeks later Wassermann and Kahn tests were positive for the first time since his stay in this institution.

Tr. of stramonium gives him relief of his annoying tremors. Benzedrine sulfate seems to have no effect.

Case 5.—J. Z., white male youth born on May 12, 1916. At eight years of age he "had what was diagnosed as brain fever and sleeping sickness for three months and recalls having seen double." He realizes that a change has come over him since having had that "brain disease." He became very restless, spits and chews his knuckles. His volitional control became very poor. Speech is slurring, rapid and indistinct with a nasal coloring. Excessive eroticism expressed itself in promiscuous "grabbing of girls by the breasts in the streets, park and anywhere a woman could be seen."

Because of these "sex" offenses, he was arrested several times and placed in several state institutions. After having recognized the postencephalitic condition of this patient, he was placed at the Dixon State Hospital in October of 1932. His stay here is notable for outbursts of anger and uncontrollable temper tantrums, crying and swearing, and homosexual practices.

He presents a mild tremor of the upper and lower extremities, a mask-like expression and an altered sleep pattern. Typical and frequent oculogyric crises set in five years ago. Wassermann and Kahn serology tests negative.

Since the introduction of benzedrine sulfate into his treatment with tr. of stramonium, he has shown favorable improvement not only in decrease of number of eye seizures, but in the reversal of the disturbed sleep pattern.

Case 6.—A. H., 28 years old; white male. Usual childhood diseases. At eight years of age he began to exhibit character changes. He "became mischievous" and began to do poorly in school. When he reached his 19th year of life a "weakness and shaking" of the right half of the body was noted. His speech became "unclear." He was sent to Lincoln State School in December of 1921, where he remained until April of 1928. Records show that he was quite a behavior problem. From Lincoln he was transferred to Dixon State Hospital.

Examination at present reveals a very marked right hemiplegia, a propulsive shuffling gait, stooping and uninterrupted tremor of facial and lip muscles. Speech is low, scanning and monotonous. Repeated serology tests are negative. History of onset of eye seizures cannot be obtained. Responsive to tr. of stramonium and benzedrine treatment.

Case 7.—J. K., 29 years old; white American male. No definite history of encephalitis. At the age of 12 he was shot "by a BB gun" in the face. One year later he began to exhibit difficulty in writing, walking and swallowing. Many doctors have been consulted for many years. The consensus of opinion was that he was developing a "creeping paralysis." His "eye spells commenced one year ago."

This patient was admitted at the Dixon State Hospital in May, 1929, at which time the examining physician described him as "presenting the characteristic picture of postencephalitic Parkinsonism." At present he has a shuffling uncoordinated gait. He is inclined to walk backward and assume all kinds of positions, drools badly, and has difficulty in swallowing. Rough tremors of both upper and lower extremities, as well as facial muscles occur only occasionally. He is edentulous and appears undernourished. The mouth is open and the eyes stare. His voice is unsteady and breaks from a low pitch to a high screaming falsetto. His eye seizures are infrequent and he "can control them if he concentrates." Narcolepsy not marked. Tincture of stramonium 1 drachm, t.i.d. and benzedrine sulfate mgs. 10 t.i.d., relieve him of his tremors, rigidity and eye seizures, but his drooling continues.

Case 8.—C. B., 19 years old; American boy. No definite history of encephalitis. Usual childhood diseases. At two years of age he developed erysipelas, "a blood test" revealed 4 plus Wassermann, his mother a stage dancer, was also found to have a 4 plus Wassermann. Several courses of antiluetic treatments were

given to both mother and son. Several times the results were negative. At 14 years of age a complete change came over this boy. He cried, screamed, began to despise school, lie, masturbate, tortured animals and began to hallucinate and exhibit paranoid tendencies. He finally came to the attention of The Institute of Juvenile Research.

"Our most recent physical examination of C. B. found him in the Parkinson state of chronic lethargic encephalitis. He stood in a hunched posture, the head projecting forward and lowered. There was a tremor of the lids and fingers, especially of the left side. The left side of the face seemed slightly weaker than the right. Occasionally cogwheel resistance could be detected in the left elbow. There was an inconsistent Chaddock sign on the left and a definite positive Hoffman sign on the same side. The right pupil was found to be irregular and somewhat sluggish to light. The left pupil was fixed to light and accommodation. The face was rather immobile and the voice monotonous." He developed "eye seizures" four years ago just before his admission to Dixon State Hospital.

Present examination confirms above findings, except that the Parkinsonian state is more definite with loss of automatic motion of the arms, festination, slurring speech, drooling, mask facies and narcolepsy. He has hallucinations of the paranoid variety.[29] He responds best to tr. of stramonium one drachm t.i.d. and benzedrine sulfate mgs. 10 t.i.d. He is relieved of narcolepsy, tremor and oculogyric attacks, as long as medication continues.

Case 9.—R. K., white male born in 1911. Had scarlet fever at five years, and "sleeping sickness" at six years of age. Anamnesis is not complete. Was admitted to Dixon State Hospital on December 16, 1928.

The staff was of the opinion that he was exhibiting early symptoms of postencephalitis. Special note was made of his gait (festination), open mouth, mask-like face, and reversed sleep pattern. His history also makes note of the fact that he has developed sex perversions, mutilating tendencies (also described by Goodhart and Savitsky, and cited by Jenkins and Rowley,[27] killing domestic animals, and molesting little girls.

At present he is found to be an undernourished edentulous (self extracted), typical postencephalitic with a coarse cigarette rolling tremor bilaterally, festinating gait, forward as well as backward. Emotionally he is unbalanced, crying and screaming before and during the attacks of ocular spasms, which set in about five years ago, and have occurred regularly every two or three days, becoming progressively worse.

Tr. of stramonium decreases tremors but slightly, has little affect on sleep and behavior disturbances. Benzedrine sulfate added to the tr. of stramonium, gives this patient "pep," regulates the sleep pattern and decreases the severity of the oculogyric crises.

Case 10.—F. P., 25 years old; white male. No definite history of encephalitis. Came to the attention of the police at an early age for truancy, thieving and sex offenses. Was admitted to Dixon State Hospital in July of 1931.

At that time an "ironed out facies" was reported in his physical examination, with "no tremors." The physicians agreed that he was a victim of a postencephalitic syndrome with behavior disorders. The remarks of his later history deal with "falling asleep," at all times of the day and suffering of "forced upward movement of the eyes."

At present he presents the typical postencephalitic Parkinsonism. The body is stooped, shuffling scissor gait, with festination, very coarse tremor with cigarette-rolling element of both upper extremities. The tremor of the lower extremities is milder. Before and during an oculogyric crises, he exhibits uncontrollable temper tantrums, cries and swears.

Tr. of stramonium makes him deathly sick; vomits and complains of gastric and bladder discomforts. Hyoscine hydrobromide in doses of 1/100 of a grain 3 or 4 times daily, helps him subjectively. His tremors and eye spells continue, however. Benzedrine sulfate in small doses gives him more "pep and less sleepiness."

Case 11.—C. K., 28 years old; white male. No known history of encephalitis. Had most of childhood diseases. At 11 years of age "was hit by a brick thrown at him by a playmate." He was retarded at school. Since 1923 he has slowly assumed "a stooped position, began to shake all over and run instead of walking." External strabismus of right eye developed slowly. Wassermann and Kahn tests negative. He was admitted to Lincoln State School and Colony in June 1923, and transferred to Dixon State Hospital in February of 1926. During his 13-year stay in this institution he developed into a typical postencephalitic with marked rough tremors of the extremities, cogwheel rigidity, festination, indistinct slurring speech. No definite date is given of the beginning of his "eye seizures," but at present they occur particularly after "excitement." He is practically helpless, being bedridden, when off medication. The sleep pattern is reversed.

Tr. of stramonium, especially when fortified with large doses of benzedrine sulfate gives him relief, not only of his somnolence and of the reversed sleep pattern, but decreases his tremors and number and severity of eye spells.

Case 12.—H. C., 28 years old; white American male. Had encephalitis (?) in 1927, at which time he had high temperature. He remained in bed for one month sleeping almost continuously. A few days after recovery he experienced a weakness in the left half of the body. His left upper and lower extremity became progressively useless. He developed a dysarthria and peripheral tremor about one year after the acute disease. At about the same time he experienced his first "eye trouble."

Physical examination reveals a tall young man of phthisic constitution, waxen facies, left lower facial palsy, and a peculiar stare. A marked coarse tremor of upper and lower extremity is evident. He has a left hemiplegia with a left drop wrist and an ankylosis of the left foot; his gait therefore, is a mixture of propulsion and dragging. Eyes react sluggishly, other reflexes are lively. Laboratory tests are non contributory. Psychometric test I.Q. .59. He has typical oculogyric attacks at frequent intervals with no aura.

He can be made to break the trance of the attack as the author has done by manipulating a cataract knife, so that he could see it. "Don't hurt me Dr. Weiner," he pleaded, as he looked into my eyes. A few seconds later his eyes were again way up in the orbits. This scare procedure was tried again with success, but failed a third and fourth time, even though suggestions of "thrusting the knife into the eyes were made." He received no drugs, until his readmission to the Dixon State Hospital in August of 1938. He is relieved of his frequent eye seizures and tremors, but not so much of his narcolepsy, by the treatment of tr. of stramonium and benzedrine sulfate—4 drachms, and mgs. 30 per diem, respectively.

Case 13—C. N., 23-year-old white male. Has no definite history of encephalitis other than having "laid for weeks like dead" in an Akron, Ohio, hospital after leg amputation for acute osteomyelitis at five years of age. Since the age of seven he has experienced frequent seizures of sleep. Many times he "walked to school while asleep, and opened the eyes only upon reaching the school gate." At 13 years of age he developed tremors and restlessness. He was diagnosed "sleeping sickness" and sent to Lincoln State School. His "eye spells" started in 1932.

After his release from this institution he became a sex delinquent, molesting little girls, failing in his first year high school work. At home he was "uncontrollable" and at times "dangerous." He was admitted to Dixon State Hospital December 14, 1936.

On examination he is found to be a well developed and well nourished male, with a typical cigarette-rolling tremor of the hands. A coarse tremor is readily seen in the muscles of the face, lips and tongue. There is a suggestion of mask-like facies; speech is slurred. Left leg amputated to within 5 to 6 inches below the knee. Serology tests are negative. I. Q. .96. His ocular spasms occur irregularly, particularly after emotional stress. Both his eyes and head turn to the left and up. About two minutes before the attack, his eyes "begin to jump." He can bring them down "about three times," but then "they go up and stay put." Many times he screams and swears, cries bitterly and pities himself. Occasionally he has excruciating pains in the eyeballs. He does not think of anything during the attack, but hears, answers questions and cooperates with the examiner.

Responds best to large doses of tr. of stramonium 5—7 drachms per day fortified with 50 mgs. of benzedrine sulfate.

Case 14—J. P., 29-year-old well developed white male with an I. Q. of .58. Had encephalitis in 1928, was ill for three months and slept two days continuously. He recovered and felt well up until 1936, when he began to "tremble" and his movements began to "slow up." He felt "dopey and tired," and would fall asleep "most any place" during the day, but would stay awake at night. He lost all "pep" and could hardly "dress himself" but "could run well." About a a year ago he noticed that after a "funny feeling in the bones," both eyes[28] would go up and he "just could not bring them down." On examination it was noticed that he stooped and exhibited a rough tremor of both upper and lower extremities, lips and tongue. He had a mask facies, devoid of any expression even when provoked to laughter. His speech was slow, low and monotonous. Serology and other laboratory tests negative. His behavior during treatment was without remark. He responded best objectively as well as subjectively, to treatment of stramonium and benzedrine sulfate. When treatment of starmonium alone was given he continued to "nap" every several hours.

Case 15—S. G., a 32-year-old white American male of Polish lineage. Early childhood history checkered with automobile accidents, after one of which he was unconscious for two days. In 1918 he had the "flu" following which he had "peculiar feelings in the eyes." There was a fluttering of the eyelids and "all of a sudden the eyes turned up and became fastened." At about the same time he had noticed a weakness in his right hand; his eyelids "blinked often and he could not talk plain."

He made the rounds of the various clinics in Chicago in a search for a "permanent cure," but instead, received only temporary relief from hyoscine hydrobromide gr. 1/100 t.i.d. His eyes became more troublesome and interfered with his employment as a truck helper, upholsterer, etc., and he voluntarily entered Elgin Hospital in February, 1938. Having recognized his condition as being "chronic encephalitis," the authorities had him committed to Dixon State Hospital and was admitted here June 8, 1938.

Examination reveals a poorly nourished white male with a distinct right limping gait, typical Parkinsonian attitude, waxed appearance, irritating blepharospasm, rough tremor of the facial muscles and an indistinct slurring speech. Negative serology tests. On admission he was completely helpless. Narcolepsy very marked. Pupils did not react to light and accommodation, other neurological tests were non-contributory. Eye seizures are typical oculogyric attacks. He responded admirably well to treatment of tr. stramonium, one drachm t.i.d. and benzedrine sulfate 30 mgs. His eye seizures diminished both in length and severity. He is an active worker in charge of the cottage dining room and seldom falls asleep during the day.

Case 16.—R. P., white male, aged 24. At seven years of age he "fell from second floor down the stairs on the sidewalk and hit his head." Had diphtheria and measles at the age of ten years complicated by pneumonia. Since then has been very disagreeable, coming in conflict with the other children in the neighborhood. He began to "lie," masturbate and in general exhibited excessive eroticism. No definite history of encephalitis. Admitted to Dixon State Hospital from the Oaks School in July, 1929, and discharged in December, 1931. Readmitted in April, 1936. At his readmission this patient exhibited a text-book picture of Parkinsonism. All Parkinsonian features persisted to this day with the addition of oculo-cephalogyric crises. His general behavior is compulsive. He cries, laughs, swears, and attacks weaker patients about him, before his attacks of oculor spasm. During the attack he lies helplessly with head and eyes turned to the left and has a generalized rough tremor. Helpless without medication,

he responds admirably well to tr. of stramonium and benzedrine sulfate in moderately large doses.

Case 17.—J. P., Italian male, born in 1913. Had "meningitis and encephalitis" at the age of two years. Anamnesis incomplete. Was admitted to Lincoln State School and Colony at the age of 12. While there his condition was recognized as that of postencephalitis.

He was transferred to Dixon State Hospital where the diagnosis was corrborated. His behavior here was erratic. Hypereroticism was noted at an early age. He could not adjust and caused considerable trouble. He has overindulged in homosexual activities and contracted G. C.

On examination at present he is found to be limping with a propulsive type of gait. He fatigues readily and presents a mask-like facies. His speech is indistinct and hard to comprehend. He has typical oculogyric crises frequently. He falls asleep every few hours. Serology tests negative and neurological findings are non-contributory.

He is helpless without medication, but responds well to tr. of stramonium and benzedrine sulfate.

Case 18.—M. L., 24-year-old white American female. She had diphtheria, whooping cough, measles, chickenpox, bronchial pneumonia and infantile paralysis (?) at seven years of age. Admitted to Dixon State Hospital in October of 1929.

History as to onset of supposed infantile paralysis (?) cannot be obtanied. Physical examination revcals a well nourished and well developed female. Body inclined forward and bilateral equinovarus deformed feet. Scars are present over dorsal aspects of both ankles. The pupils are irregular and neurological findings noncontributory. Wassermann and Kahn tests are negative. Cries frequently without provocation. Speech very monotonous and indistinct, drools and has fine rhythmic tremors. Oculogyric attacks are bilerateral associated with cephalogyric element. Responds best to hyoscine hydrobromide.

Case 19.—G. H., white American, 25 years old, female. Admitted to Dixon State Hospital on May 8, 1928. The history discloses that she had had "sleeping flu" in 1921. Until then she was developing normally. This disease left her with bilateral equinovarus deformities.

At present she is helpless in bed and must be fed. She has ankylosis of both knees, ankles and phalangeal joints of fingers. Her facial expression is blank, eyes wide open, mouth open and edentulous, drooling, mild tremor of both upper extremities, tongue and facial muscles. Reflexia is exaggerated. Speech is incoherent. Serology tests negative. Oculo-cephalogyric attacks are typical, prolonged, frequent and painful.

This patient responds well to hyoscine hydrobromide and benzedrine sulfate.

Case 20.—J. G., 23 years old; Jugo-Slavian girl. Had encephalitis lethargica in 1926. Several years after, she was found to be overactive and uncontrollable at home. She slowly became stooped, acquireed a festination gait with rigidity in the muscles, a marked facies and much drooling. She was committed to a Montana State Hospital and transferred to Dixon State Hospital in February of 1931.

Her behavior was eratic, biting, scratching and molesting the other patients.

Physical examination at present reveals in addition to the above findings a bilateral equinovarus. Ocuogyric crises set in four years ago, and occur infrequently. Her speech is indistinct and reflexes hyperactive, coordination faulty. Wassermann and Kahn tests are negative. Responds to a combination of tr. of stramonium and benzedrine sulfate.

Case 21.—G. P., 21 years old; white female. Complete history unobtainable. Admitted to Dixon State Hospital in June of 1938. Diagnosis of postencephalitis made.

Examination reveals an obese, slowly moving girl, with mast-like facies and typical oculogyric attacks. She was troubled with attacks of sleep for some time and is said to have fallen asleep in school. Wassermann and Kahn tests negative. B. M. R.—13.

She was placed on observation with various drugs described. With tr. of stramonium and bezedrine sulfate her weight came down from 149 to 127. B. M. R. came up from —13 to plus 10. Her marcolepsy disappeared and oculogyric crises decreased in number and severity.

Case 22.—R. H., 24-year-old unwed white mother. Admitted to Dixon State Hospital on April 16, 1937. At five years of age this girl had the "flu," mumps, whooping cough and smallpox, and at eight "sleeping sickness," after which she was always "drowsy." About two years after her "sleeping sickness," she slowly developed a "stooped posture," curvature to the "right" and "constant nervous twitching" and "difficulty in walking." Her parents state that she became irritable and disagreeable, used profane language, tired easily, and "eyes began to roll up into the head."

On examination at present, above findings are exaggerated, mouth is open, facies "ironed out," bilateral tremor is coarse, eyes stare, speech is indistinct and scanning. There is a right hemiplegia with reflexes exaggerated on that side. Diagnosis is postencephalitic Parkinsonism.

This patient does not respond to any of the medication tried.

Case 23.—E. K., 28 years old; white girl. Committed to Dixon State Hospital by transfer from Lincoln State School and Colony. In her history there is a reference to "sleeping sickness" in 1918, during which time the patient was very sick and delirious. Two years after this sickness, weakness over the entire left half of the body set in. Tremors of the face, tongue and upper and lower left extremities came on later along with sialorrhea, impairment of speech and a slowly developing left divergent strabismus. About six years ago typical oculogyric attacks set in. A diagnosis of postencephalitic Parkinsonism was made.

At present she exhibits a lordotic attitude with rhythmic tremors as discussed above. She complains of "sleepiness" during the day. Wassermann and Kahn tests are negative. I. Q. 110.

She responds very well to tr. of stramonium which relieves her rigidity, tremors, and sialorrhea and to benzedrine sulfate, which 'peps" her up and keeps her "awake" during the day.

Case 24.—A. S., 38 years old; white female. Admitted to Dixon State Hospital in February, 1937. She had a "goiter," since 13 years of age; sleeping sickness during 1923, during which time her mother "once tried to awaken her, but she only opened her eyes and went right back to sleep and slept almost continuously for two to three months." In 1931 she contracted lues from her husband, who has since died.

On examination she presents signs and symptoms of a trimvirate of thyroidtoxicosis, lues and postencephalitic Parkinsonism. She is a well formed malnourished woman, very nervous and anxious about her condition. There is a marked right external strabismus.

There was a definite exophthalmos, and tachycardia, B. M. R. plus 43. Wassermann and Kahn 4 plus repeatedly after three courses of intensive antiluctic treatment. Spinal fluid Wassermann negative. There was a hemiparkinsonism involving the left side, with rhythmic pill-rolling tremors of the fingers and coarse continuous tremors of the left face, muscles and tongue. Neurological examination was non-contributory.

Her oculogyric crises started in 1933. She was put on the described regimen, but her B. M. R. jumped up to 90, so I dropped her from this group for special observation. It would be interesting to see the relationship between lues hyperthyroidism and encephalitis.

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For the permission and encouragement to make this observation, I am indebted to Mr. A. L. Bowen, Director of the Department of Public Welfare of the State of Illinois, Dr. Paul L. Schroeder, Criminologist, and to Dr. Warren G. Murray, Managing Officer of the Dixon State Hospital.

Dixon State Hospital.

DISCUSSION

Isidore Finkelman, M. D.—One of the most important events that occurred in relation to the continued training of the physician in the state hospitals was the formation of the State Hospital Physicians' Association and the section devoted to it by the annual meeting of the Illinois State Medical Society. Many State Hospital Physicians who heretofore have been content to consider their employment by the state as merely a means of earning a livelihood are now stimulated to work beyond their routine tasks and make original observations of value to the patients in these hospitals and present their findings at these meetings.

Dr. Weiner has done a good job with the material that was available to him. He has exhaustively described the various theories for the occurrence of oculogyric crises as a residual of encephalitis lethargica.

The psychologic components of this phenomenon deserve some mention. The patients that I have observed during the oculogyric crises have either hallucinatory experiences associated with ideas of reference, such as people talking about him behind his back, or compulsive and obsessive thoughts and a feeling of anxiety. With the disappearance of the neurologic components of the oculogyric crises there is also a relief of the mental symptoms.

The mental phenomena occurring during the oculogyric crisis are even more difficult to explain. There are mental components of emotions which also have somatic symptomatology, such as fear that is accompanied by colitis, dryness of the mouth, rapid pulse, etc.; or rage accompanied by increase in blood sugar and other bodily changes. The peculiar turning of the eyes backward in the oculogyric crisis may be the bodily counterpart of the mental phenomena that present themselves. There probably is a feeling of helplessness during the oculogyric crisis and the patient being unable to see who is behind him may elaborate ideas of reference, develop a feeling of anxiety and other mental phenomena. This may be established as a conditioned reflex occurring always with the oculogyric crisis. The therapeutic effect of benzedrine and the belladonna group of drugs may indicate that the oculogyric crisis is of vasospastic origin.

Dr. Benjamin Boshes, Chicago: I wish to point out that the reader stated that this condition is seen only in encephalitis of the epidemic type. However, we may find it in any type of encephalitis. From the standpoint of description, "oculogyric" means rolling of the eyeballs. In some form of petit mal we see the eyeballs moving upward, and in certain of the epilepsies, the pyknolepsies, and particularly in the petit mal attacks of the prepubertal period, we see these deviations of the eyeballs upward for a few seconds. Then they are brought down. The difference between the "oculogyric crisis" of the epileptic and that of the encephalitic is that the epileptic patient has a modification of consciousness while the encephalitic knows his eyeballs are up. We should keep in mind that these oculogyric crises are not confined to patients who have suffered from epidemic encephalitis.

Question: How is the stramonium and benzedrine sulfate given; at one time or one followed by the other, and in what dose?

Dr. Harry I. Weiner, Dixon (in closing): In this group of patients I gave the stramonium in doses of from 3 to 7 drachms per day depending, of course, upon how the individual patient reacted to this drug. The benzedrine sulfate I have given in very large doses, up to 80 mgs. per day. The literature reports even larger doses. If I am not mistaken, as much as 180 mgs. of benzedrine sulfate has produced no untoward effects. The only bad effects I have noticed have been gastric and bladder disturbances and insomnia. The first two, however, were only mild discomforts and responded well to either topical application of heat or the withdrawal of the benzedrine, or both. I like to give this sympathomimetic drug three times daily; at six and ten o'clock in the morning and at two in the afternoon; never later than two P. M., because it has in many cases caused insomnia when given later.

In conclusion, I would like to thank Dr. Finkelman for his discussion. I am very grateful to him for elaborating on the psychic manifestations of the oculogyrics. I, too, have noticed many psychic manifestations in my group of patients. These psychic manifestations are dominated by fears and hallucinations. The literature has many very interesting references to just these types of symptoms.

RARE FRACTURE — RARE CAUSE CASE REPORT

V. R. VANSTANE, M. D.

CHICAGO

On March 17, 1935, Mr. E. J. H. came to me with the complaint that he had injured his right arm at the elbow six days previously while bowling. He had not bowled any for many months or years until this occasion. He made several shots with no trouble, then while making another shot he drew his arm backward in preparation to propel the ball and just as he endeavored to pull the arm forward to force the ball forward he felt pain in the arm at the elbow joint. He continued bowling for a few more shots and experienced only a moderate pain at the elbow with each shot. Then with further efforts the pain became quite severe with each shot and he decided he should stop bowling and did so. For the next four days the arm gave no great trouble or pain, but the fifth day there was a great deal of pain in the elbow joint region, so much that he could no longer flex the forearm more than about ten degrees. This condition remained until he came to see me the next day. He had noticed some swelling about the elbow too.

On examination, there was noted slight swelling about the joint, especially about the dorsal aspect of the ulna and olecranon. Around this region, also, there was marked tenderness to pressure. There was very little pain to pressure around the radial head and the epicondyles of the humerus. Rotation of the forearm caused only slight pain when done passively or actively except at the extreme limits of rotation. There the pain became severe. The arm was held continuously in a slightly flexed position by the patient, that being the most comfortable. No other abnormality of position or carrying angle could be detected. No crepitus could be felt. An x-ray film which the patient had had made by his dentist before he came to me revealed an incomplete fracture extending from the joint surface of the olecranon about at its junction with the ulnar shaft in a zigzag line toward the dorsal cortex, but not extending through that. Figure 1 will illustrate diagrammatically the foregoing description of the fracture. The joint surface was somewhat irregular along the line of fracture, small fragments of edges being elevated.

The diagnosis of incomplete fracture of the olecranon extending dorsad from the joint surface was evident. Of course there was practically no displacement of the fragments.

Under gas anesthesia the arm was passively and carefully moved into complete flexion and extension, a little pressure being made on the olecranon, then immobilized in slight flexion by a posterior molded plaster splint extending from the proximal third of the upper arm to the distal third of the forearm, some cotton padding having been placed next to the skin, and the padding and splint being held snugly in place by sufficient bandaging. On 3/19/35 the arm was entirely comfortable and an x-ray film on that day showed considerably more smoothness of the joint surface along

the line of fracture, the elevated edges having been leveled off by the passive motion and pressure before the splint was applied.

On 3/23/35 it was noted that the splint allowed four or five degrees of movement at the elbow. This was, of course, a good thing for the joint to help prevent adhesions and stiffness of the joint. Slight active and passive movements were carried out that day and caused no pain in the joint. One week later active and passive movements of the elbow joint gave no pain until flexion and extension neared full normal limits.

Massage about the elbow joint was carried out, then the arm was splinted with the elbow in 90 degrees of flexion and placed in a sling. Three days later active and passive movement and massage were again done and the right angle splint replaced. During the next two weeks active and passive movements of increasing ex-

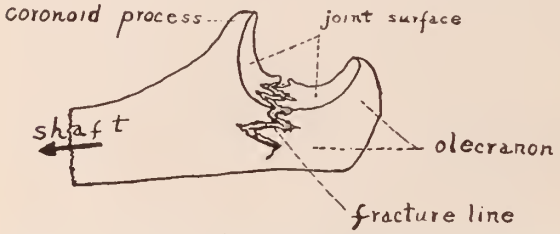


Fig. 1. Diagram of upper end of right ulna showing incomplete fracture of olecranon caused by hyperextension in bowling.

tent, massage, and diathermy treatments were applied to the arm and elbow joint twice each week and the arm was allowed to go unsplinted and unslung. By that time the arm had regained complete normal function without pain, except that extension would go to a straight line only instead of bending slightly backward in slight hyperextension as the other arm did naturally. In other words, the extension angle at the elbow was 180 degrees instead of about 184 degrees. Possibly in time this natural hyperextension range returned, although I did not see the patient later to check on this point.

I have searched the literature back to and including the year 1879 and I found no record of this type of fracture of the olecranon; that is, fracture of the olecranon by hyperextension of the arm at the elbow joint. It was readily seen that such a mechanism of fracture of the olecranon was a rare occurrence, and it must certainly be even more rare that such a mechanism would be brought about by the act of propelling a sixteen pound ball in bowling.

Causes of fracture of the olecranon by direct violence as a blow on the elbow, or a fall on the elbow, are frequent. Less frequently violent muscle pull on the olecranon by the triceps muscle with the arm more or less flexed has been given as a cause of olecranon fracture. Oftener both muscle pull and direct violence acting together may cause such a fracture. In all of these mechanisms, of course, hyperextension does not occur. Other causes found listed were motorcycle accidents, automobile accidents, trolley car accidents, and athletics, but the exact mechanism was not given. The impression given, however, was that these instrumentalities brought about the direct violence, the severe muscle pull, or both, and thus caused the fracture.

Specific mention that fracture of the olecranon could and does happen due to hyperextension was found in two instances, however. Dr. Kellog Speed in his book on "Fractures and Dislocations" published in 1916 and again in revised edition in 1935, says that "hyperextension of the forearm may also cause fracture of the olecranon because of the fact that the tip of the process

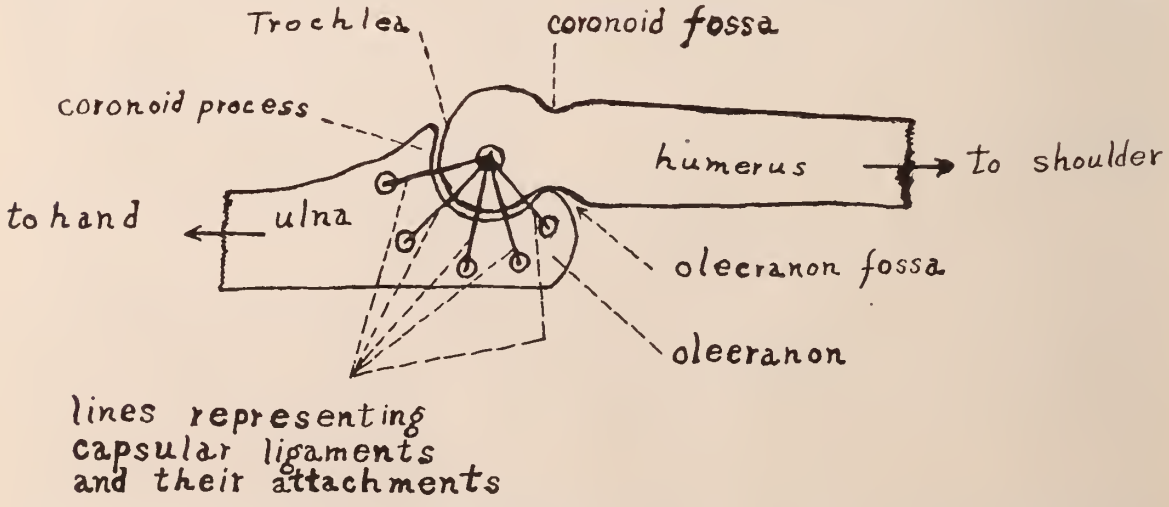


Fig. 2. Schematic representation of normal relations of structures at elbow joint with arm in normal complete extension.

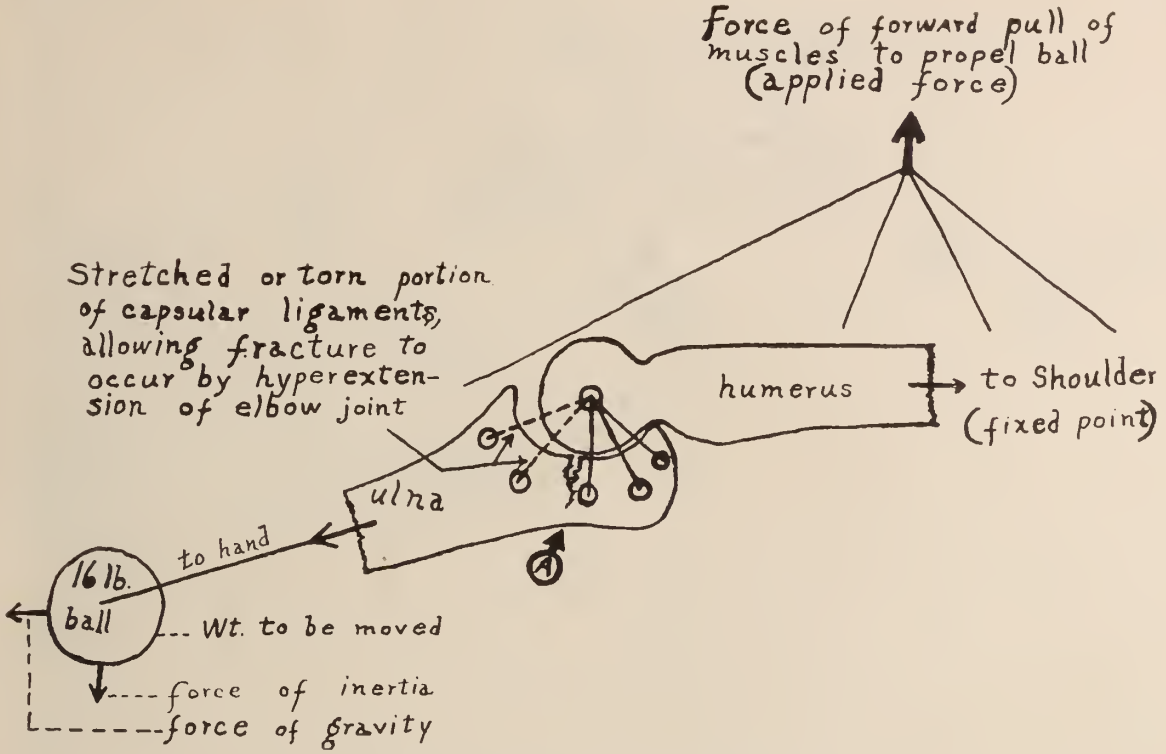


Fig. 3. Schematic representation of hyperextensionand fracture.

impinges against the olecranon fossa of the humerus. Capsular stretching or tear permits the ulna to extend beyond its usual range, and the tip is split off from within outward. Fracture of a condyle or dislocation forward of the head of the radius may accompany this type."

Dr. Eldridge L. Eliason in his book on "Fractures of the Humerus, Radius, and Ulna," published in 1925, says that "cases are reported where the beak of the olecranon has been broken by hyperextension."

These two authors made no further comment concerning fracture of the olecranon by hyperextension. Many other authors whose texts I checked through on this subject made no mention at all of such a mechanism of fracture. They all give considerable information on olecranon fracture by direct violence, severe muscle pull, or both, however, and classify them by location as tip and neck fractures, and epiphyseal separation, the latter often occurring if the patient is under sixteen years of age, this being about the age at which the epiphysis unites by bone with the ulna. These fractures may be classified, as all fractures may be, as transverse, diagonal, comminuted, compound, or a chip fracture from the point of the olecranon.

Classifications applicable to fractures of the olecranon by hyperextension of the elbow joint would come under the following headings—first, complete and incomplete—with reference to the extent of the fracture through the olecranon; second, chip fracture from the tip of the olecranon and transverse fracture at or near the neck of the olecranon, these referring both to the location of the fracture and its direction. Separation of the epiphysis may occur if the patient be under sixteen years of age. I do not believe

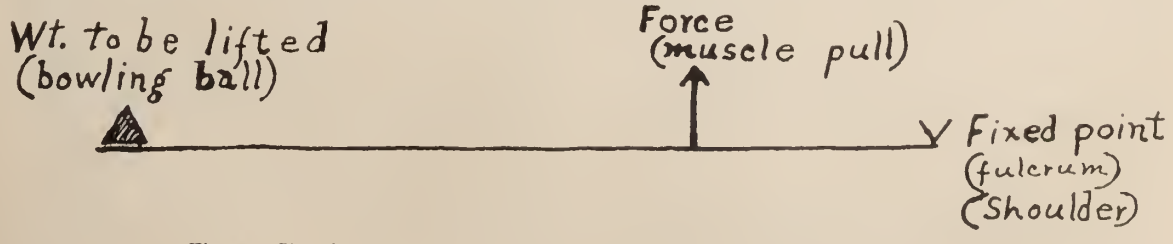


Fig. 4. Showing type of lever mechanism when armis considered as one unit.

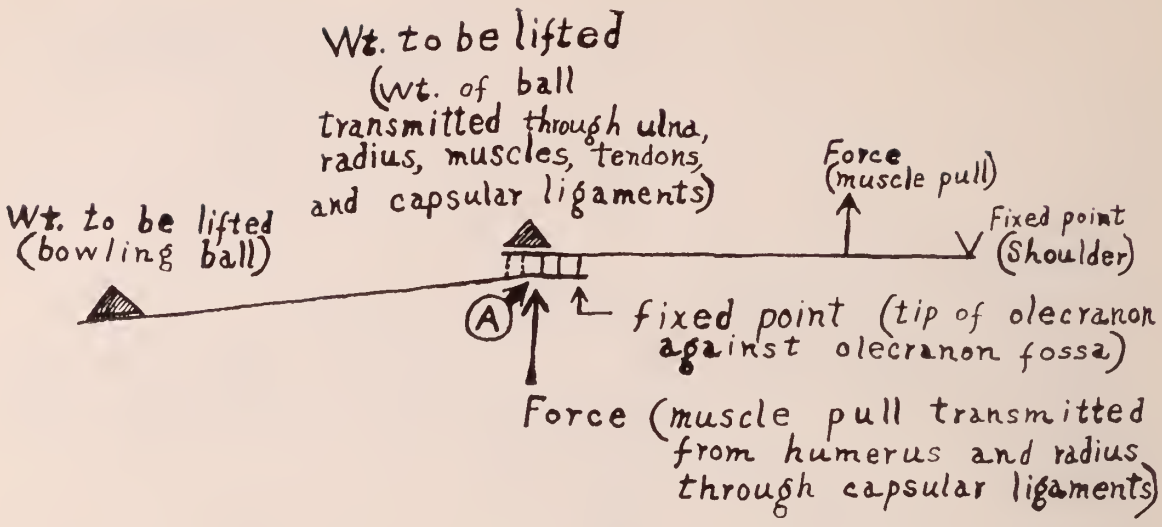


Fig. 5. Showing type of compound lever mechanism when compound nature of human arm is considered.

such a fracture would ever be directed diagonally except in the tip chip fractures, because the mechanism and the bone structure would hardly permit this. I feel certain, too, that such a fracture would never have any marked degree of misplacement or separation of the fragments except in cases in which the forearm was carried far in hyperextension by continued action of the hyperextending force. The capsular ligaments and the tendonous attachments of the triceps brachii and anconeus muscles tend very markedly to prevent any great separation of the fragments in all types of fractures of the olecranon. This fact often makes the treatment very simple, and maintenance of good position of fragments and subsequent bone union easy to obtain.

The sketches in Figures 2 and 3 will illustrate diagrammatically the mechanism that brought about the break in the continuity of the olecranon at the joint surface and outward extension in the case I have herein reported.

Figure 4 shows more clearly the type of lever action involved in the propulsion of a bowling ball if the entire arm be thought of as a single unit. A more nearly accurate illustration is given in Figure 5. Here we take cognizance of the fact that the lever is really a compound one and that the weak place is at the joint where the acting force or muscle pull is transmitted to the second distal lever through the ligaments, muscles and bones.

The ligaments distal to the point A, the neck of the olecranon in Figures 3 and 5, stretch or tear and the bone structure then gives way under the tension that falls on the volar side of the bone. In this case it seems evident that the patient failed to call into play a slight flexion action of the following muscles: biceps, brachii, brachialis, pronator teres, flexor carpi radialis, flexor carpi ulnaris, palmaris longus, flexor digitorum sublimis, brachio-radialis, and extensor carpi radialis longus, at the time the arm received the sudden pull forward by the following group of muscles: pectoralis major, anterior portion of the deltoid, coracobrachialis and biceps brachii. For the first group of muscles mentioned serve to flex the elbow and protect the elbow joint against hyperextension. Surely with such a large group of muscles doing their work of slightly flexing the elbow joint, or at least being brought into sufficient tenseness to bear their share of the tension when the second group of muscles suddenly began their endeavor to overcome the forces of inertia and gravity and bring the bowling ball forward, the capsular ligaments, especially the more distal ones as shown in the diagrams, would not have been called on to bear more strain than they were capable of standing, and hyperextension and fracture would not have occurred. In short, the first group of muscles failed to protect the skeleton against damage by sudden severe action of the second group of muscles, a failure of complete and accurate coordination of the muscle groups. Possibly this was due to their being under voluntary control of the brain—motor, sensory and psychic centers. In other words, the patient

failed to realize that such a protective action of the first group of muscles would be necessary until it was too late. This might be called a

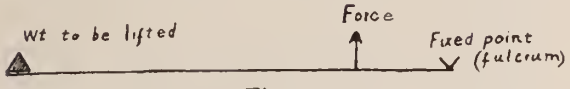


Fig. 6.

lack of proper judgment or a lack of experience and training. It will be recalled the patient had not bowled for many months or years. The memory of how to go through with the activity remained clear enough in his mind, but the muscles had become untrained, or less well developed, or both. It will be noted that the biceps brachii muscle could and should have helped in the work of both groups of muscles.

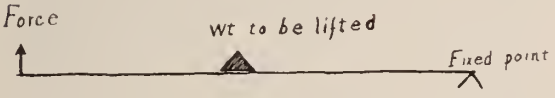


Fig. 7.

It will be seen, too, that the lever action involved here is the least efficient type of the three known types. Figures 6, 7, and 8 will illustrate the types of simple lever mechanisms in their ascending order of efficiency, the first being the least efficient and the type involved in the patient discussed above.

However, it is least efficient only when it is desired to lift a heavy weight with the arm straight and horizontal. In the action of throwing an object, if the object be not excessively heavy, the type of leverage exemplified in the human arm is most highly efficient to transmit speed and force to the object thrown. One could

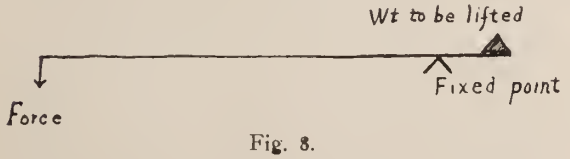


Fig. 8.

enumerate many other reasons why the type of lever action and the arrangement of muscles, bones, ligaments, joints, etc., in the human arm are such that they serve the entire organism in a highly efficient manner. The trouble in the case cited herein was that the great coordinator, the brain, did not serve the organism to the highest possible degree of efficiency.

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L on 793L

SUBPHRENIC ABSCESS

M. H. Judd, M. D.

LITTLETON, COLORADO

T. R. Hudson, M. D.

Thoracic Surgery Section
Veteran Administration Facility.

HINES, ILLINOIS

Subphrenic abscess is not an uncommon condition. It is encountered rather frequently, but the diagnosis is often missed or delayed because the physician either fails to consider it as a possibility, or incorrectly evaluates certain signs and symptoms which are presented. The following case is presented because it illustrates certain characteristic diagnostic features commonly associated with abscess beneath the diaphragm. The use of artificial pneumothorax as a diagnostic aid is illustrated.

R. B., a male negro, aged forty-four, was admitted April 28, 1938. Occupation was letter carrier but he had been unemployed for the past two years. About April 25, 1938, he began to have pain in the lower right chest, more severe on cough or deep inspiration. A few days later he became short of breath. He gave a history of "stomach trouble" for the past eighteen or twenty years. In 1929 he consulted a physician who told him that he had a gastric ulcer. His symptoms subsided after a period of dietary and medical treatment but recurred again in 1931. He was again relieved after a Sippy regime. He was then symptom-free until 1936 when he began to have a gnawing pain in the pit of the stomach, occurring one-half to one hour after meals, relieved by food or soda. He was awakened frequently at about 1:00 A.M. by the pain, which required food or soda for relief. These symptoms gradually became worse until about the first of April, 1938, at which time the pain became quite severe and he began to vomit. During the week just prior to admission he vomited several times a day, become very weak and began to have chills and fever. He lost about fifteen pounds in weight in two months. He gave a history of hematemesis and tarry stools. The family and remaining past history were essentially negative.

Physicial examination on admission showed a semiambulant male negro, temperature 100.6° F., pulse 104, respirations 20, apparently acutely ill. Blood pressure 110/70. The only recorded positive findings at the time of the first examination were in the abdomen. There was moderate rigidity of the right upper quadrant. The liver seemed to be palpable about two finger breadths below the right costal margin. There was a suggestion of a mass in the right upper quadrant, and the entire right subcostal area was definitely tender.

Urinalysis April 28, 1938 showed 4 plus albumin, a

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moderate number of red and white blood cells. On the same date the red blood cells numbered 4,150,000. hemoglobin 80 per cent, leukocytes 14,600,, polymorphonuclears 76 per cent., lymphocytes 24 per cent. Blood Wassermann and Kahn reactions were negative.

X-ray studies of the gastro-intestinal tract May 2, 1938 demonstrated a persistently deformed second portion of the duodenum, interpreted a duodenal ulcer.

The patient was placed on medical management for duodenal ulcer. He became progressively more toxic with temperatures of 102 to 103° F. daily. On May 16th there was more severe pain in the right chest, worse on deep inspiration. An x-ray examination of the chest revealed an acute inflammatory process at the right base, suggestive of serofibrinous pleurisy.

A special chest consultation was requested and is summarized as follows: The right side of the chest lags. Tactile fremitus is absent at the right base. Voice conduction markedly diminished at the right base. Thoracentesis was done at the time of the examination and 500 c.c. of straw-colored, serous fluid were removed and 400 c.c. of air injected into the pleural space. The patient was then taken to the x-ray room, placed on

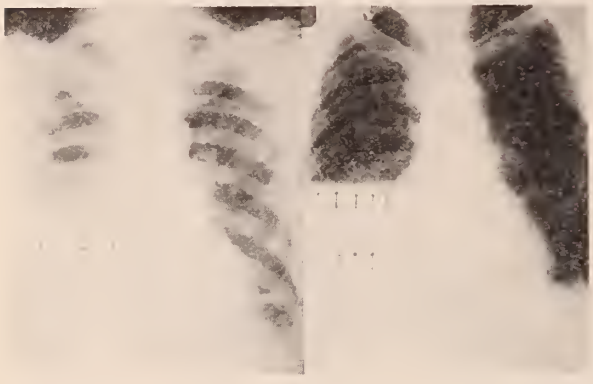


Fig. 1. Film showing effusion in right chest, presented at time of chest examination.

Fig. 2. Potter-Bucky film of chest following partial aspiration of pleural effusion and injection of 400 c.c. of air. Arrows indicate two fluid levels.

the unaffected side with head down so that the air in the pleural space might rise and lie next to the diaphragm, and an AP exposure was then made (Figure 3). This was done because it was the opinion of the examiner that the basic pathology was below the diaphragm. These plates confirmed the diagnosis of right subphrenic abscess.

Operation was advised and was done on May 21, 1938. No attempt was made to localize the abscess by aspiration prior to operation. Under local anesthesia a small exploratory incision was made through the upper right rectus, over the right lobe of the liver. This was done because of the marked tenderness just below the right costal margin. Through this incision it was determined that the abscess was walled off by dense adhesions between the diaphragm and upper superior surface of the liver, just above the costal margin. This incision was closed, the patient turned on the left side and a portion of the eighth rib resected in the anterior axillary line. The periosteal bed was markedly thickened. Layer by layer incision showed that a free pleural space was not being traversed. An opening was made directly into the abscess cavity and a large amount of pus evacuated. Three Penrose drains were placed in the cavity and the wound packed open with mercurochrome gauze.

There was rapid improvement following this procedure. The temperature did not rise above 100° F. after operation and remained normal after the twelfth postoperative day. Drains were removed on the twenty-second day and the wound was healed and drainage stopped on the twenty-eighth day. Following the operation he was given appropriate ulcer treatment and the gastro-intestinal symptoms disappeared. Patient was discharged from the hospital July 27, 1938. He has since remained in good health.

This case presents all the findings usually characteristic of a fully developed subphrenic abscess, and we feel that for that reason it is somewhat unusual, if not rare. It can easily be seen that at one period in the development of this condition the outstanding findings and symptoms pointed to a chest condition (pathological changes above the diaphragm). Improper evaluation of the findings might lead to a serious mistake in diagnosis, so serious in fact as to result in the patient's death, due to lack of correct treatment.

ETIOLOGY

It has been said that subphrenic infection is much more common than generally supposed, most of the infections subsiding spontaneously without being recognized or without developing into an abscess.[1]

In general, the sources of subphrenic infection may be (a) intra-abdominal, (b) blood-borne, (c) or extension of intrathoracic infection. In a large series of cases Ochsner and Graves[1] determined that the primary lesion was located in the abdomen in the majority of cases, 90 per cent. or more. About four per cent. were due to blood-borne infection and approximately three per cent. were due to extension of intra-thoracic lesions through the diaphragm. In two other cases seen in Hines Hospital during 1938, one was secondary to perforated peptic ulcer; the other followed appendicits and peritonitis, which had been operated upon elsewhere. In the latter case autopsy showed in addition to an anterior subphrenic abscess, a localized abscess in a loop of small bowel and a small lung abscess just above the diaphragm. According to various writers about one-third of all subphrenic abscesses are due to appendicitis and about one-third are due to perforating lesions of the stomach or duodenum. The focus in 12 per cent. of the cases

is located in the liver and bile passages. It has been stated that subphrenic abscess occurs in about 1.5 per cent. of the cases of acute appendicitis.

Subphrenic abscess is much more common in males than in females. The figures vary somewhat in various reports, but in general the ratio is about 70 per cent. males and 30 per cent. females.

Ireland[2] concluded that subphrenic abscess is not common in children, but that the clinical course is substantially the same as in adults. He reported six cases in children, four following acute appendicitis, one following rupture of a gastric ulcer, and one following lobar pneumonia.

The subphrenic space may become involved following abdominal suppuration in one of the following ways:

1. Invasion from immediate vicinity.
2. Extension from the pelvis or right iliac fossa by way of the gutter between the ascending colon and lateral parietal peritoneum to the right kidney region and then to the subdiaphragmatic area.
3. Up anterior abdominal wall by way of local abscess extending directly to the anterior superior surface of the liver.
4. Extension on up retroperitoneal cellular tissue.
5. Rupture of liver abscess.
6. Through lymphatics.

Both the inferior and superior surfaces of the liver are richly supplied with lymphatics, as in the under surface of the diaphragm. Lymphatics have also been demonstrated passing from the liver to the diaphragm. This fact explains the mechanics of one of the complications of subphrenic abscess which will be mentioned later. Truesdale[3] states that the lymphatics are the common carrier of infection from the peritoneal cavity to the liver and diaphragm. Knowing that the general flow of lymph is upward, it is easily understood that infection from an appendix to the subphrenic area would go by the following route:

Appendix
Appendicular lymph notes
Ileocecal nodes
Lymphatic trunk following superior mesenteric vein
Liver lymphatics
Diaphragm.

SYMTOMS

There is no symptom complex which is invariably diagnostic. Neither are clinical pictures presented by various cases always similar. Either abdominal or thoracic symptoms may be outstanding. The systemic symptoms are those of continued sepsis, fever of the spiked variety, and sustained leukocytosis. Pain is variable in location, it may be in the lower chest or may be located in the corresponding shoulder, suggesting diaphragmatic pleurisy. Symptoms may arise



Fig. 3. Taken same time as Figure 2. Patient lying on left side with head depressed. Arrows indicate fluid levels above and below diaphragm; the former being due hydropneumothorax, the latter representing gas and fluid in the subphrenic abscess.

from the complications. About 30 per cent. of the patients develop pleurisy on the homolateral side and may have typical pleurisy pains. Respiratory embarrassment may occur as a result of pleural effusion.

The diaphragm may become perforated at the site of the abscess with resulting empyema, providing the pleural space is not protected by adhesions at the site of the perforation. If there are solid adhesions and perforation occurs, a bronchial fistula may result, and the findings may suggest lung abscess.

DIAGNOSIS

We feel that the most important factors in the diagnosis of subphrenic abscess are the history and x-ray findings. The history must be painstaking and complete. The *x*-ray examination must be adequate. A single film of the region

involved is seldom diagnostic, as will be shown later. It will be noted in the case which we are reporting that on admission the presenting complaints were pain in the right lower chest, most severe on deep inspiration or cough, and shortness of breath. The increasing severity of these complaints led to the examination which established the correct diagnosis. Had this patient been treated as a possible tuberculous or "idiopathic" effusion the procrastination would have resulted in his death. However, the case was unmistakable when a thorough history was obtained.

Figure 1 is the chest film taken at the time of his chest examination and it shows evidence of pleurisy with effusion but no evidence of tuberculosis. There is nothing in the film as it stands to suggest subphrenic abscess and had the x-ray examination stopped here, the diagnosis might not have been made. It is suggested that a minimum of three films be taken in cases of suspected subphrenic abscess: A PA film with regular technique, a PA film with Potter-Bucky technique, and a lateral Potter-Bucky exposure.

In Figure 2 a fluid level can be seen under the righ diaphragm. This is a Potter-Bucky film. However, it cannot positively be stated that the lower fluid level is UNDER the diaphragm.

Figure 3 shows a film of the same patient after aspiration of the pleural fluid and injection of air. The patient was placed on the sound side with the head of the table deeply depressed at the time of exposure. The film clearly visualizes the diaphragm. There is a fluid level above due to effusion. Beneath the diaphragm there is another fluid level, indicating subphrenic abscess.

Often rigidity of the abdomen is found. Ochsner states that tenderness over the eleventh rib is very characteristic of posterior subphrenic abscess. Tenderness is often found on firm pressure over the lower ribs anteriorly if the abscess is anterior.

It is well to note that while a fluid level beneath the diaphragm is diagnostic in connection with other findings, it can be seen in only about 15 per cent. of the cases. It is well to remember that the fluid level is not diagnostic unless seen on the right as a level of fluid in the stomach may be seen on the left.

Lilenthal[4] points out that pneumoperitoneum is of aid in making a differential diagnosis. He states that air may be injected into the peritoneal space and a film taken in the upright position. If an air bubble is seen under the diaphragm, subphrenic abscess may be ruled out because no inflammatory reaction is present between the liver and the diaphragm. The practice of using an aspirating needle to diagnose subphrenic abscess is condemned. Either peritonitis or empyema may result from its ill-advised use.

TREATMENT

Early diagnosis is probably the most important factor in the treatment of subphrenic abscess. Drainage is indicated as soon as the diagnosis of abscess is made. The route of approach must vary in the individual case. As we have stated previously, attempts to localize the pus by aspiration are to be avoided. The extra-serous approach described by Ochsner[1] is probably the most satisfactory procedure for use in the majority of cases. In this method no serous membrane is traversed and the importance of this fact in draining a purulent focus is earily appreciated. When the abscess is located posteriorly the twelfth rib is removed and a horizontal incision is made across the bed of the rib at the level of the first lumbar vertebra. At this level the pleural reflection will be missed in every case. Blunt dissection is carried out with the finger upward, outside the peritoneum and beneath the diaphragm, until the abscess pocket is reached. A finger is plunged through the wall of the abscess and a drain inserted. If the abscess is located anteriorly the attachments of the anterior abdominal muscles at the costal arch are sectioned and blunt dissection outside the peritoneum is begun, continuing upward under the diaphragm, over the liver but outside the peritoneum. The abscess presents itself as a resistant inflammatory area into which a finger is plunged and drain tubes are inserted.

Preoperatively it is often impossible to localize the abscess exactly. As is illustrated here, cautious, gentle exploration through a small upper abdominal incision does no harm, and often enables the operator to tell just where to resect a rib. At times one will find that the abscess is walled off from the lower abdominal cavity and may safely be drained through an abdominal incision.

We favor the use of soft rubber drains. Stiff

tubing often causes pressure necrosis and further complications. Instances of perforation through the diaphragm due to pressure of this type of drain have been reported. The wound must be kept open until the cavity is obliterated and the drainage stops.

Irrigations are used, mostly because of their mechanical cleansing action. They should not be frequent and the use of irritating chemical solutions is to be avoided. We, however, do not favor their routine use, feeling they are not needed if adequate drainage has been provided.

The mortality of subphrenic abscess without operation is 90 to 100 per cent. With operation, the highest mortality is found when drainage traverses peritoneum or pleura.

CONCLUSIONS

1. A case of subphrenic abscess is presented.
2. The condition is discussed from the standpoint of diagnosis, etiology, symptomatology and treatment.
3. The use of artificial pneumothorax as a diagnostic aid is illustrated.

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TREATMENT OF HEAD INJURIES

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It is impossible in as short a time as is assigned to me today to cover this subject completely in detail, and I will not presume to be able to, but I shall endeavor to develop the important principles involved in the treatment of head injuries and the most usually accepted treatment as it is today. Skull fractures *per se* are not any more serious than fractures of other bones, and usually less so, because the complications of the fracture itself which may follow other bone fractures, such as non-union, malunion and deformities impairing the usefulness of the part, do not follow skull fractures. The injury to the contents of the cranium determines the seriousness of the skull fracture, its symptoms and also the treatment.

The anatomy of the skull is important in its relation to the pathology and treatment of head injuries. The adult skull is a closed compartment with some expansion possible at times. The vault of the skull is made up of membranous bone which lends elasticity to the skull and reduces the local effect of trauma by dissipating the most severe part of the force along radiating lines of fracture. The two tables of the bones of the vault with the intervening diploe, acting like shatter-proof glass, dissipates both local and radiating effects of the injury. The brain is not absolutely immobile but is only more or less fixed, and is set in motion after an injury applied to the skull, in that way striking itself against the skull. Fatal cases of brain injury occur in which skull fractures are not found but the brain is damaged by multiple small hemorrhages throughout. The pathology of injury to the brain is hemorrhage, edema and necrosis. The edema and consequent increase in brain volume interferes with the cerebrospinal fluid pressure. The increased intracranial pressure may be adjusted, but if it remains too great, then an anemia of the medulla results which first has the effect of stimulating the vital centers, and if continued it results in vasomotor and respiratory failure. At present some observers are beginning to think that all the symptoms of brain injury are not due alone to increased intracranial pressure but also to certain physiochemical changes in the brain cells resulting from trauma, and that the present treatment to relieve intracranial pressure is not all the treatment which eventually will be prescribed. Further work along this line will be necessary to develop a subsequent new routine therapeusis.

All traumas to the head, that is whenever trauma has been directed to the head with no matter how insignificant resulting apparent injury, must be considered as serious cases. Frequently a case with slight apparent damage at the onset may eventuate in a very serious case, so it behooves us to keep all such cases under observation for at least seventy-two hours before dismissing them as recovered. I have seen cases develop large epidural hemorrhages even beyond this period.

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Alcoholism is the frequent diagnosis made in cases which do not have very definite signs and symptoms of brain injury. I recall many such cases which occurred during my internship at the Cook County Hospital thirty years ago, when we did not recognize brain injuries as well as we do today, that were refused admission to the hospital, sent to the police station with the diagnosis of acute alcoholism and found dead in their cells within twelve hours. Autopsy would show skull fractures with brain injury. At present the estimation of the alcoholic content of the blood may assist us in the differential diagnosis, but we must always bear in mind that an alcoholic may and frequently does sustain a brain injury. It is very important that the condition be well evaluated early and that not too much or unnecessary treatment be administered during our first anxious moments.

The shock which accompanies all of these cases must first be treated. The patient should be put to bed immediately with either a heat cradle over him or hot water bottles about him. While in shock the patient should lie flat in bed; following the shock a moderate Fowler's position is maintained which frequently improves respiration and tends to prevent hypostatic pneumonia. Caffeine and strychnine hypodermically, and hot coffee and whiskey retention enemas are of value in the treatment of shock. In the severe shock cases from cerebral injury, blood transfusion may be given and the oxygen tent used. It is imperative that we do as little as possible in the stage of shock, except as may be indicated in the infrequent serious cases of epidural hemorrhages. One of the common practices is the immediate x-ray of fractures of the skull. This should not be done until the shock subsides, which usually is within six to twelve hours. Nothing is gained by the early x-ray of the skull and much may be lost by the unnecessary movement of the patient. I cannot emphasize too strongly the danger of early x-ray in injuries of the brain. It is necessary that restlessness be combated, else injury to the brain, as hemorrhage, may be increased. Bromides or one of the barbiturate derivatives may be given by mouth, or hypodermically, or chloral hydrate per rectum. Morphine sulphate is contraindicated because of its respiratory depressant effects.

The subsequent treatment following shock is dependent upon the clinical picture rather than the type of fracture which may be present. Close and careful nursing care is very essential; respirations, pulse, temperature and blood pressure should be recorded at least hourly and in some severe cases more often. At this time we must visualize the pathological changes in the brain following an injury. Edema of the brain with increase in brain volume occurs, resulting in a cerebral anemia and medullary compression with terminal paralysis of the vital centers. The cerebrospinal circulation is interfered with and varies with the blood pressure, but follows the venous more than the arterial pressure. The indications of this pathology for treatment are to restore the normal fluid and vascular pressures and reduce the increased volume of the brain from edema. Complete rest and quiet is very essential; visitors should be prohibited, and a nurse well trained in the treatment of head injuries should be in charge; that is, one who will not over-treat the patient and not keep him disturbed and in motion most of the time. A moderate Fowler's position is used. Ice bags to the head may be used from an empirical dictum. The intracranial pressure may be reduced, especially that which is due to edema of the brain by the use of intravenous injections of a hypertonic solution. In the past a hypertonic saline solution of five per cent. was used, but because of its rather severe reaction its usage has been discontinued. Solutions of 50 per cent. glucose or sucrose are now used, the latter because of its supposed more prolonged dehydration effect. Experimentally it has been shown that the cerebrospinal fluid pressure begins to fall within three minutes after 50 per cent. glucose is injected intravenously and continues for thirty to forty minutes when it reaches its minimum and so remains for two or three hours. Observers have recently demonstrated that in some cases the cerebrospinal pressure is unaffected by hypertonic solutions and may even raise the pressure. For an average adult 50 cc. of 50 per cent. glucose or sucrose is used, repeated every four hours until improvement occurs. Occasionally over-dehydration occurs, when headache, marked restlessness and vomiting appear on the fifth to seventh day. Therefore, the dehydration process is not innocuous but must be watched carefully for untoward symptoms. The dehydration is not sufficient to attain the desired

results, for after a time unless elimination of this excess fluid in the blood occurs, a reverse process appears and fluid is again put back into the tissues. For that reason elimination should be obtained through the bowels, skin and urinary tract. Fifty per cent. magnesium sulphate solution is used as retention enema, 150 to 200 cc. being injected slowly every three hours. Diaphoresis is obtained by keeping the patient well blanketed and by keeping hot water bottles about the body.

To increase the urinary output, of late I have used one of the organic mercury compounds intramuscularly, on the same basis as they are used for cardiac edema. I have not used them in a sufficient number of cases as yet to draw any definite conclusions, except that I believe that both from the academic viewpoint and clinical results so far obtained by them, eventually they may prove to be of therapeutic value. A precaution that always must be taken before their use is to exclude the presence of nephritis by a complete urinalysis.

The next procedure to be considered is the much debated spinal puncture. The majority of neurologists and neurosurgeons recommend the procedure. That a herniation of the medulla through the foramen magnum by release of the spinal fluid may occur is the most prominent argument against a spinal puncture. I have never seen this accident and, in a recent report of seven cases autopsied who had died of skull fracture and herniation of the medulla, six had not had a spinal puncture. This may be explained by the fact that a heavy waterlogged brain is more apt from its weight to push the medulla through the foramen magnum than a brain made lighter through spinal puncture. Some neurologists are advocating cisternal rather than lumbar puncture, the supposed advantages being that it is closer to the injured tissues, easier to perform and carries no more hazard than does the lumbar puncture. I believe that the danger of puncturing the medulla with the needle in cisternal punctures greatly increases the danger of the cisternal puncture over the lumbar.

When shall the puncture be done? Statistics show that the earlier the puncture is done, the lower the mortality rate. It is advisable, if possible, to wait until shock has subsided before making a spinal puncture, although this is not an absolute rule. Repeated convulsions and convulsions gradually involving more of the body may indicate puncture before shock has subsided. If shock has disappeared and coma or delirium persists, pulse slowing in rate, respirations increasing and the temperature is above 102 degrees, puncture should be done. Continued restlessness, delirium, slow pulse increasing in rate, rapid and Cheyne-Stokes respirations, and a persistent low diastolic pressure are all indications for a lumbar puncture. In brief, all cases showing subarachnoid hemorrhage and increasing cerebral pressure should have a lumbar puncture. No matter how desperate the case may be, if a puncture is indicated, it should be done, as these cases will die if let alone and some may be saved, so there is nothing to lose and everything to gain. It is rather inadvisable to do a puncture on a very restless or delirious patient who resists the puncture strenuously, because the excitement may raise the cerebral pressure to more dangerous levels and the resistance of the patient may cause the spinal needle to be broken off in the vertebral column, which is a serious accident.

A definite contraindication to lumbar puncture is extradural or middle meningeal hemorrhage. A manometer should be used in doing a puncture and only sufficient spinal fluid to reduce the pressure one-half should be removed at each puncture and never should the pressure be brought below ten mm. of mercury. The puncture should be repeated every six hours until the patient improves and the fluid pressure has returned to normal.

Subtemporal decompression, according to its most ardent advocates, is indicated in only ten per cent. of cases. It should not be done immediately and seldom before six hours after the injury. The longer the operation is deferred the better prognosis. When a patient does not respond to conservative treatment, indicating possibly large clots producing increased intracranial pressure, decompression may be done. The operation is performed on the side of the cranial injury, if such can be determined; if not, on the right side, as this hemisphere is silent. The mortality rate of this treatment is much higher than that of the conservative and lumbar-puncture type of treatment.

Escape of brain tissue from a fracture wound of the skull does not necessarily label that case

as fatal. If a fracture of the base is through the middle fossa with resulting loss of cerebrospinal fluid from the ear, it is necessary to keep the auditory canal free from infection. The canal should be cleansed of cerumen and blood clots, and then filled with either a 3.5 per cent. solution of tincture of iodine or some other antiseptic. The head is rotated and the solution allowed to run out and a sterile dressing applied over the entire ear. The canal should not be plugged with cotton or gauze which impedes drainage and predisposes to infection and resulting meningitis.

Now, as regards depressed skull fractures, usually these cases can be diagnosed without x-ray and, therefore, the shock should first be treated. Unless there is a massive depression or an escape of brain tissue through the fracture there is no indication to operate upon these cases immediately. If compounded, the scalp should be cleansed, bleeding points ligated and the wound sutured as early as the general condition of the patient permits. If symptoms of increased intracranial pressure are present dehydration should be instituted, and when the patient is in a favorable condition, sometimes as long as fourteen to twenty-one days after, an elevation of the fracture may be done. It is advisable, if possible, to elevate so that the fragment may be replaced.

When the depression is in the mid-line, the longitudinal sinus may have been injured and then plugged by clot and the depressed bone, so that on elevating the depression an active hemorrhage may result from reopening the wound in the sinus. Therefore, one must be prepared to suture the sinus in these cases. The most frequent indication for elevation in these cases is to prevent future adhesions between the brain, meninges and skull with resulting brain conditions, as epilepsy.

Middle meningeal hemorrhage shows a dilatation of the pupil on the side of the hemorrhage, motor weakness of the body in the side opposite to the dilated pupil, and a gradual onset usually with a lucid interval which varies in duration according to the severity of the hemorrhage. These cases must be operated upon, the clots removed and the bleeding vessel ligated.

Simple fissured fractures without increased intracranial pressure need only rest in bed for about three weeks. If symptoms of increased pressure appear, the usual conservative methods are used to combat it.

A word about x-ray findings. Many basal fractures will not be seen on x-ray films. Stereoscopic lateral and anterior posterior films should be made of both sides of the skull.

May I now show a few of the slides illustrating some of the points which I have discussed.

In conclusion may I present this brief resumé:

1. Treat the brain injury and the pathology resulting therefrom and forget the fracture.

2. Treatment should not depend upon the presence or absence of demonstrable fractures of the skull either clinically or roentgenologically, but only upon clinical symptoms of brain injury.

3. The shock should always be treated first; there should be no hurry for x-ray examination.

4. Conservative type of treatment by means of dehydration and lumbar puncture is indicated in the large majority of cases.

5. Further study of the physiochemical changes in the brain cells resulting from injury may establish certain facts which will greatly revolutionize our present idea of the treatment of brain injuries.

6. Each case should be treated individually; the patient and his injury should be evaluated and that type of treatment prescribed which is best fitted for it.

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ENDOCRINES AND THE GENERAL PRACTITIONER

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Practically every case of endocrine disorder is seen first by a general practitioner. Conversely, from 75 to 90 per cent. of the patients who consult general practitioners have, as one factor (often the only one) in the condition for which they seek medical advice, some major or minor disturbance of the endocrine functions.

It, therefore, behooves every general clinician to be thoroughly familiar with the signs, symptoms and management, not only of the major endocrinopathies, such as Graves' disease, Addi-

*Science News Letter, Feb. 14, 1939, page 73.

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son's disease, acromegaly, involutional psychosis, cretinism and the like (which are relatively rare and easy to diagnose), but also of the minor disorders of the ductless glands, which are so common as to be almost universal, and so vague and elusive in their manifestations as to be overlooked more often than they are discovered.

We must never lose sight of the fact that, except in a jar of preservative on a pathologist's shelf, no endocrine gland is ever an isolated and individualistic organ. Always, in living men and women, these glands are constantly acting and reacting upon one another and upon the cells and functions of the rest of the body, especially the autonomic nervous system, to which they are closely akin.

So varied and complex are these glandular interrelationships that the well-known endocrinologist, Dr. R. G. Hoskins, of Harvard Medical School, has figured out* that the possible types and combinations of endocrine activity number no less than 14,000,000; so it would appear that there is still a wide field in which we may increase our knowledge of these organs, whose relatively small size is ridiculously out of proportion to their vast functional importance in the human economy.

We must not, however, permit ourselves to be dismayed by the immensity of the mass of presently undiscovered facts, whose study will engage future generations. There is readily available, *now,* sufficient clinically established information along this line to permit us to give our patients from 50 to 100 per cent. better service than most of them are now receiving, simply by making *daily and hourly use* of such knowledge as is already lying more or less dormant in the minds of most physicians, or can be obtained by a moderate amount of earnest, sincere, and continuous study.

In a brief paper like this, it would be sheer foolishness to attempt even to sketch the material regarding the major endocrinopathies, now embodied in scores of massive volumes which can be consulted in any reasonably complete medical library. I shall, therefore, confine myself, largely, to a general, practical, clinical discussion of a few of those commoner minor endocrine disorders (chiefly deficiencies) which play so large and important a part in the everyday work of all general clinicians, whether they know it or not, with an occasional mention of some point in the diagnosis or treatment of the more serious troubles which, in my opinion, has received insufficient attention.

CLIMACTERIC DISTURBANCES

The commonest of all departures from ideal health in which the ductless glands are involved are those of Warthin's "Major Involution," because these affect every man and woman who lives beyond the age of 45 or 50 years. Most of these people do not consult a physician unless some serious or disabling symptom develops, because the women expect to be uncomfortable during the "change of life," and the men do not know that they can have any such thing, and when they are seriously ill they have little or no idea what ails them, so that much medical sleuthing must often be done, on the basis of small clues, to discover the culprit. Many never seek professional advice at all, accepting their waning powers and waxing infirmities as an inescapable concomitant of growing old.

The physicians who equip themselves with knowledge, and study these cases with diligence and understanding, will soon have more practice than they can comfortably handle, for these folk who are facing the downward slope of life's hill are almost pathetically grateful to the man who can add life to their years (even if he cannot add many years to their lives), and the good news travels fast.

The cessation of menstruation is such a striking sign of waning gonadal function that it cannot be overlooked. Most women anticipate and watch for the appearance of the climacteric, or menopause, with dread, and many use it as an alibi for ill temper and other psychic symptoms, for which they wish to escape personal responsibility, or attribute to it the symptoms of some more or less serious disorder with which it has no connection, and so delay applying for treatment until the most favorable stage of the malady has passed. The symptoms of the normal climacteric in women are too well known to require comment, but should not be accepted, by the alert physician, without a complete and careful examination, as an explanation of all of the patient's complaints.

Men, as a rule, do not realize that they are subject to a climacteric at all, and unless or until they become afflicted with prostatism, refuse to admit, even to themselves, (to say nothing of telling it to the doctor), that they are no longer

young, until the progressive failure of their general power, perseverance, and potency has become so marked as to excite their active concern.

The symptoms of the climacteric in men (which occurs from five to 15 years later than in women) are somewhat similar, though less marked, than in the menstruating sex, and include peripheral circulatory disturbances ("hot flashes"), irritability, "nervousness," sometimes disturbed sleep; but especially a vague sense of slackening of the life force, diminution of interest in and capacity for concentration on the day's work and other matters that had formerly aroused enthusiasm, and, most conspicuously, a weakening or loss of sexual potency.

The taking of an adequate and enlightening history in these cases requires patience, diplomacy, and meticulous care not to overlook some definite disease state which may be responsible for a part or all of the symptoms.

Much help can be given to these uncomfortable, and frequently unhappy people, of both sexes, by means of *gonadal substitution therapy,* which, because it *is* substitution therapy, must be continued throughout life. The common aversion to constantly "taking medicine" can be removed by pointing out to these people that what they are taking is not *medicine,* but merely a highly specialized *addition to their diet,* as they might take vitamins (which are distinctly dietary adjuncts) in capsules, instead of adding large quantities of vegetables or milk or other foods to their menus.

For this purpose, true extracts of whole ovaries or testicles, which are now available, may be given by mouth, over long periods, with good results, in most cases. Sometimes it is well to supplement the oral administration with an occasional (once a week to once a month) parenteral injection of a suitable preparation of the appropriate glands. When the optimum dose, *for the individual,* has once been established, it is rarely necessary to increase it; but it is well to stick to the particular preparation on which the patient was started, as there are considerable differences in the potency and clinical assimilability of various preparations which may be equally meritorious in themselves.

Strangely enough (or perhaps it may not be so strange, after all), an elderly virgin, who receives little or no benefit from ovarian extract after a thorough trial, will sometimes blossom like a rose when given *testicular extract.* It is worth trying; but such patients should rarely be told that any *radical* change is being made in their treatment, and should *never* be told what they are receiving.

For men, a preparation of testosterone propionate has recently been introduced which stands between the oral and parenteral methods of administration, and, so far, seems to be giving satisfactory results in the treatment of the climacteric symptoms. This is known, in one of its commercial forms, as oreton ointment, and is applied by inunction.

Elderly men who are beginning endocrine substitution therapy should be explicitly told, so that they will not be disappointed, that, while it is fairly certain that it will increase their sense of general well-being and their capacity for and enjoyment of work or other activities, it may not (though it occasionally does) improve their sexual potency. Women who have been properly conditioned sexually, by loving husbands who are expert in erotic technics, generally retain their sexual desire and power of response rather better than their consorts, and frequently to an advanced age; and the best remedy for failing potency in a man is a long "second honeymoon" with an affectionate, understanding, and sexually well-trained wife.

It should also be noted that certain active preparations of the male sex hormone, frequently (but not always) produce good results in mild or moderate cases of prostatism.

In these cases, as well as in those of rather vague and relatively mild conditions of apparent endocrine subactivity, it is generally a good plan to supplement any specific treatment which may be prescribed with one of the reliable pluriglandular formulas which are now on the market.

HYPOADRENALISM

Second in frequency to the almost ubiquitous gonadal deficiencies (at least in middle life and beyond), are the deficiencies of the adrenals; and this is logical, because these glands are seriously taxed by all infectious diseases and by all emotional upsets, especially that chronic form of *fear* that we call *worry,* which seems to be so nearly universal in these days of stress and uncertainty.

The predominant symptoms of minor adrenal deficiency are a more or less vague sense of phy-

sical lassitude (often called laziness by the patient's family), and a low blood pressure, which should be verified by repeated tests, at different times of the day. There may also be a diminution of ambition and enthusiasm, largely due to the collateral failure of the gonadal hormones, and easy brain fag.

In these cases, much improvement will frequently follow the oral administration of active preparations of the adrenal cortex or of the whole gland, over long periods of time—months or years. The patient should be warned that he (or, more frequently, she) must not expect prompt and spectacular results, like those following a dose of castor oil, and should not look for noticeable changes in his feelings from day to day; but if he will compare the way he felt at the beginning of last month, with the way he feels at the beginning of this, the improvement will be fairly obvious. If the patient, or his physician, is at all in doubt as to what has caused the improvement, let him discontinue the treatment for two or three weeks, and note the result.

Since the adrenals suffer in all acute febrile diseases, it is good practice not to wait until the deficiency is obvious, but to begin reenforcing these glands early in the illness, by administering a readily assimilable cortex extract. An excellent preparation for this purpose contains a glycerite of adrenal cortex and reticulo-endothelial cells, and is known, commercially, as correlin.

In cases of muscular asthenia, where the blood pressure is relatively normal, so that there is doubt about specific adrenal deficiency, or even as an adjuvant in definite adrenal involvement, do not forget the virtues of glycine or glycocoll in these conditions. Gelatin contains about 25 per cent. of this amine, and from ½ to 2 ounces a day, of the dry substances, is a dose. It may be given more economically in the more concentrated form known as glycolixir (Squibb), in either tablets or liquid. Like opotherapy, this treatment takes from ten days to two weeks to show obvious results, but in the cases where it works (a high percentage), when it does take hold, the patient knows that something has definitely happened.

THYROID DISORDERS

True cretinism is so relatively rare that few general clinicians see more than half a dozen cases in a lifetime of practice, and frank myxedema is almost as uncommon; but cases of moderate hypothyroidism are frequently encountered.

Thyroid-deficient children have round, expressionless faces; a hard, shiny, infiltrated skin, with a blotchy appearance of the extremities; a weak, tremulous voice; a late and often imperfect puberty; and definite intellectual debility. Sometimes these hypothyroid children are thin, nervous, and hyperkinetic.[1] In such cases, look for delayed speech, deafness, behavior subnormalities, delayed bony development at the wrists and ankles, and increased blood cholesterol. In the mentally-retarded child, the thyroid factor should always be studied.

The hypothyroid adult grows more and more forgetful; becomes unable to concentrate on thinking, reading, or even listening; and loses his initiative and his power to make and carry out plans. These patients usually put on weight and appear sluggish, edematous, and ineffectual. Headaches are common. The hair is apt to be dry and brittle and the eyebrows sparse. A low basal metabolic rate, at several tests, establishes the diagnosis.

Intelligent thyroid feeding frequently produces dramatic results in these cases, and should always be tried. Prevention, however, is always the best treatment, and if all pregnant women, except those with Graves' disease, were given small or moderate doses of thyroid during the last three or four months of gestation, cases of cretinism and early minor hypothyroidism would soon become medical curiosities.

Today, hyperthyroidism also is a medical disease, in most cases, and can be handled by the informed general practitioner, especially if he will use the anti-goiter vaccine of Houda,[2] which is not nearly so well known as it should be.

PITUITARY DEFICIENCY

Lack or deficiency of the anterior pituitary hormones is concerned with the etiology of Mongolian idiocy and is the cause of Fröhlich's syndrome or *dystrophia adiposogenitalis,* the symptoms of which are dwarfism, genital infantilism, and adiposity of mons-mammary-girdle distribution. These children are small, fat, and fair; generally cheerful, contented, and sleepy; dislike active exercise and competitive sports;

and are slow in their reactions, so that they are often considered stupid, though their intelligence quotients are frequently above the average.

In later years these patients are sensitive about their small stature, their fatness, their retarded genital development, and their lack of physical strength and aggressiveness, and may react to these conditions by becoming moody introverts, or by actively anti-social behavior, as a defense mechanism.

In all hypopituitary cases, the finding of a definitely increased sugar tolerance is a help in making the diagnosis. Treatment with pituitary extracts, after a careful study of the individual case, may prove to be a valuable diagnostic, as well as a therapeutic measure. The earlier in life such treatment is begun, the better the prospect of bringing these patients to relative normality.

PERSISTENT THYMUS

Most physicians are aware, in a general way, of a rather rare condition known as *status thymlymphaticus,* from which babies and young children sometimes die suddenly and unexpectedly, but relatively little attention has been paid to what happens when the thymus gland, which should atrophy at puberty, persists into adolescence or adult life.

Physically, the hyperthymic adult tends to be frail and weak, with fragile bones, heterosexual configuration and hair distribution, delayed epiphyseal closure, a hypoplastic circulatory system, and low resistance to infections, particularly those of the respiratory tract.

What is much more important, however, the individual with a persistent thymus, whatever his chronologic age and size may be, is *still a child,* mentally, emotionally, and socially. These people never learn to control their reactions, to accept responsibility, or to conform to the criteria of conduct required by life in an organized society. In a recent study it was found, at autopsies on the bodies of 20 criminals (19 murderers and one rapist), that *all had persistent thymus glands.*[3] This does not *prove* anything, but it is important *evidence,* and suggests, in view of the present definite increase in juvenile delinquency, that every "problem child," before being sent to a reform school or to jail, should have the benefit of a thorough and intelligent study of his pituitary and thymic status. Many of the hypopituitary cases can be improved by treatment; and if the persistent thymus glands can be discovered before anti-social habit patterns have become set, it should be possible, at least in some cases, to cause regression of the gland by x-ray or radium irradiations.

SUMMARY

1.—Every active general practitioner sees a dozen or so patients every day, who have some minor endocrine disorders, and practically every major endocrinopathy is seen first by a general clinician, so every family doctor in the country, who is not already well grounded in the fundamentals of endocrinology, should lose no time in becoming so.

2.—Endocrine disorders are always pluriglandular, and we should never be satisfied with discovering the obvious.

3.—Pure, single hormones, given parenterally, have definite and important uses, but their effects are different from those of whole-gland extracts given by injection or by mouth, and cannot replace them in general clinical practice.

4.—The commonest endocrine disorder is the climacteric, in both sexes, and the well-informed physician can do much to make his middle-aged patients more comfortable and happier, and will be well rewarded for doing so.

5.—Definite organic disease may coexist with a glandular dysfunction, and no amount of enthusiasm for endocrinology should be permitted to betray us into overlooking such cases.

6.—All types of infections, as well as the stress and wear of modern life, tax the adrenals, so most of our patients need adrenal cortex support at one time or another.

7.—All endocrine therapy, except of the pharmacodynamic type, administered parenterally, acts slowly, and patients should be advised of this fact, so that they will not be impatient.

8.—The administration of thyroid extracts to all pregnant women would obviate most of the cases of thyroid deficiency in early life; and such extracts will frequently give much relief to adults suffering with such deficiencies.

9.—Houda's goiter vaccine is definitely curative in certain cases of thyrotoxicosis; and most cases of toxic goiter can be handled satisfactorily without surgery.

10.—Every "problem child" is entitled to a

thorough and intelligent study of his pituitary and thymus glands, as well as of his domestic environment.

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THE OPHTHALMOLOGICAL ASPECT OF DISTURBANCES OF THE ENDOCRINE SYSTEM

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There are times when the ophthalmologist sees a case of endogenous iridocyclitis which he treats locally with atropine and hot compresses and systemically with foreign proteins, sedatives and other medication. He knows that the disease is of systemic origin and therefore he refers the patient for a complete physical examination. Too often he receives no help because the teeth, tonsils, sinuses, gastro-intestinal tract, chest and other parts of the body usually examined show no abnormality and the Wassermann test and urinalysis may be negative. The internist and other consultants forget only too often or do not know that metabolic disturbances such as hypothyroidism or parathyroid deficiency may cause iridocyclitis, and the ophthalmologist himself may forget to ask for an examination of the endocrine system or may himself be unaware of a possible connection between endocrine diseases and ocular pathology. The same thing is true of cases of retrobulbar neuritis, optic neuritis, papilledema and other conditions where the ophthalmologist, after ruling out brain tumors, inflammations and other pathological processes in the neighboring structures hopefully waits for the discovery of an etiological factor by the general practitioner or specialists in other branches of medicine. The patient is checked over from head to foot but too often nothing abnormal is found. Sight may be permanently lost because we are apt to forget that disturbances of the genital system, especially disorders of menstruation, lactation and pregnancy, as pointed out by Fuchs,[1] may produce these and similar eye diseases. This is where the general practitioner, internist, and specialist in other fields often fail the ophthalmologist. The ophthalmologist is just as often at fault when he treats a case of intractable lacrimation or blepharospasm caused by hyperthyroidism or parathyroid disease by local medication or when he prescribes orthoptic exercises for a case of asthenopia resulting from menopausal disturbances. Most of us have become focal infection conscious but are not sufficiently conscious of the endocrine system. Part of this fault is due to the fact that the specialty of endocrinology is comparatively new as a specialty, and part to the fact that some of those practicing that specialty are inclined to be overenthusiastic in their claims. They ascribe every imaginable disease to a disturbance of the endocrine system and claim miraculous results from organotherapy in conditions that cannot possibly be affected by that or any other medical regime.

In trying to correlate the ocular findings with diseases of the individual glands of internal secretion the ophthalmologist is confronted by the same difficulty that confronts the internist in his evaluation of the role played by each gland in the production of the various endocrinological syndromes. Normally there is a definite equilibrium between the different endocrine glands. Secretion of one affects the others. Underactivity of the thyroid gland may, for instance, result in an overactivity of the pituitary gland and may have an inhibitory effect on the gonads and other glands. In that case one might find it difficult to ascribe the symptoms to the underactivity of the thyroid or gonads or to the compensating overaction of the hypophysis or some other gland. The same symptoms may also be brought about by pathological changes in one of several of the glands. Virilism in the female may be a result of a tumor of the ovaries, the cortex of the adrenal or a basophile adenoma of the anterior lobe of the hypophysis. Bearing this complicating factor in mind we can, nevertheless, in a general way classify the ocular findings of diseases of the various glands of internal secretion.

THYROID

Hyperthyroidism — The exophthalmus and some of the lid signs of exophthalmic goiter are among the best known ocular changes in endo-

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crine disturbances. Exophthalmus occurs in about 80 per cent. of cases in adults and about 40 per cent. in children, is usually bilateral and is rendered much more obvious when accompanied by the Dalrymple sign, that is by a widening of the palpebral fissure. The exophthalmus may go unnoticed when the lids remain in their normal position, or a widened palpebral fissure may give the appearance of proptosis and for that reason measurements should be made with an exophthalmometer in all suspicious cases. The cause of the exophthalmus has been explained by various theories.

1. Thus Silcock,[2] in 1886, and others found, on microscopic examination, fatty infiltration and fatty degeneration together with cloudy swelling of the extra-ocular muscles. This weakening of the extra-ocular muscles together with a similar weakening of the tarso-orbital fascia and lids by the toxic action of the products of perverted metabolism are considered by some to be sufficient to permit a forward displacement of the lids by venous engorgement of the orbit.

2. Nafziger,[3] in 1933, found in cases of malignant or progressive exophthalmus, that the intrinsic eye muscles were three to eight times their normal volume, looked pale and showed cellular inflammatory changes. He considered these changes to be sufficient to explain the exophthalmus.

3. Bristowe.[4] Moore and others explain the exophthalmus on the basis of deposition of fat in the orbit and edema of the orbital tissues.

Less likely explanations are:

4. Engorgement of the orbital vessels due to vasomotor disturbances.

5. Sympathetic irritation of Landstrom's and Muller's orbital muscle.

6. Adrenal insufficiency.

T. G. Moorehead[5] noticed unilateral exophthalmus after administration of thyroid extract.

Of the lidsigns of exophthalmic goiter the most common are the Graefe sign which consists of a failure of the upper lid to follow the eye on slowly looking down or of following the eye downward in a jerky manner.

Dalrymple sign is a retraction of the upper lid resulting in a widening of the palpebral fissure and giving the characteristic terrified expression.

Stellwag's sign consists in an infrequency or incompleteness of winking.

Rosenbach's sign is a fine fibrillary twitching of the upper lid on gently closing the lids.

Griffith's sign consists of a retraction of the lower lid either alone or associated with a similar retraction of the upper lid.

Most of the lidsigns are a result of a spasm of the sympathetically innervated levator palpebrae superioris. A detailed description of these and other signs of exophthalmic goiter and their explanation may be found in a paper by the author published in 1934.

Moebius' sign consists in an insufficiency of convergence.

Pareses of the extra-ocular muscles are a result of the changes in the muscle fibres described above. Epiphora may be a result of vasomotor disturbance. It may precede the exophthalmus and it may, in some cases, be the result of mechanical displacement of the puncta by the proptosed globe. Dryness of the eyes may follow an earlier lacrimation and may be caused by a lessened excitability of the secretory fibres supplying the lacrimal gland. Ulcers of the cornea may result from dryness of the cornea because of inability of the lids to cover the eyes in marked proptosis, but may also be on a neurotrophic basis since they occur even when the lids are sutured together prophylactically. Optic atrophy may be on the basis of exophthalmic goiter and has been noted to follow prolonged use of dried thyroid gland as a cure for obesity. Ramsay[6] and others described optic neuritis and retrobulbar neuritis on the basis of hyperthyroidism.

Hypothyroidism — Increase of exophthalmus and the development of exophthalmus after thyroidectomy have been reported by Zimmerman,[7] the author[8] and others. The so-called malignant exophthalmus may very well be on a pluriglandular basis with special reference to the hypophysis and adrenal glands. In some cases there seems to be a definite relationship between hypothyroidism and myopia. Fuchs mentions this relationship and a few years ago Bothman[9] read a paper on this subject. I have seen several cases of progressive myopia in children with a low basal metabolism, one of them with —25, another with —12, in whom the myopia seemed to progress less rapidly or come to a standstill after thyroid therapy was instituted. Duke Elder[10] states that cretinism is almost invariably accompanied by myopia.

Fuchs[11] and others recognize the relationship between iridocyclitis and hypothyroidism and other metabolic disturbances. Multiple chalazia, edema of the lids, pigmentation of the skin of the lids, blepharoconjunctivitis are sometimes the result of hypothyroidism. Lemoine[12] described an edema of the macula and disc as a result of hypothyroidism, and Rudemann and others obtained good results in insufficiency of convergence and accommodation resulting from hypothyroidism by treatment with thyroid extract.

PARATHYROIDS

Parathyroid insufficiency with its accompanying disturbance of calcium metabolism leads to a hyperirritability of the neuro-muscular apparatus which manifests itself in tetany. Tetany cataracts are a well known clinical entity. The lamellar or zonular cataract developing in childhood as a result of convulsions in infancy is a good example of tetany cataract but anterior and posterior subcapsular cortical cataracts progressing to total lens opacity also occur. Two such cases in whom tetany and bilateral anterior and posterior subcapsular cataracts developed following thyroidectomy were operated upon for cataract last month at the Cook County Hospital. Vancea[13] reported three children aged respectively three, five and a half and eleven years with cataracts (two total, one zonular) apparently a result of myxedema with tetanoid status. Myopia, conical cornea, blue sclerotics, ciliary spasm, blepharospasm and persistent lacrimation may be a result of disturbed calcium metabolism.

HYPOPHYSIS

Tumors of the pituitary gland, if large enough, produce characteristic visual field defects. Bitemporal hemianopsia and total blindness in one eye, with temporal loss of field in the other eye are the most characteristic visual field defects. If the tumor enlarges sufficiently vision may be lost in both eyes. Extension of the tumor posteriorly may produce typical field defects such as homonymous hemianopia, and extension in other directions may give corresponding defects. The chromophobe tumors are the commonest. They produce visual field defects, impotence in the male and amenorrhea in the female. They do not respond to x-ray treatment but lend themselves well to operative intervention. Eosinophile tumors (involving the anterior lobe of the pituitary) are familiar as causing gigantism when they occur in childhood, and acromegaly when developing in the adult. They do not become very large but may be accompanied by visual field defects. They are radiosensitive. The basophile adenoma is very rare. The tumors are scarcely millet seed in size and therefore produce no pressure symptoms on the chiasma. It is a question whether they, or changes in the adrenal or ovary, produce the Cushing syndrome, fat trunk, virilism in the female, high blood pressure and osteoporosis. Rathke's pouch tumors produce bitemporal hemianopic field defects together with other changes such as diabetes insipidus, and thermal changes when they become large enough.

Engelbach[14] describes three cases of so-called pituitarism with recurrent hemorrhages into the retina and vitreous. I have seen an acromegalic patient with persistent lacrimation due to no other evident cause but the disturbance of the hypophysis.

Temporal pallor of the discs, later total descending optic atrophy, are the commonest fundus findings in pituitary tumors.

Cushman[15] and others described headaches and bitemporal constriction of the peripheral visual fields in pregnancy and obtained improvement in both with whole pituitary and anterior pituitary extract in most cases. Great caution should be exercised in evaluating small degrees of visual field loss since many of these patients are very suggestible.

PANCREAS

Diabetic retinopathy occurs in 5 to 20 per cent. of diabetics. It is characterized by small, sharply outlined, discrete and confluent gray retinal exudates in the posterior polar region and retinal hemorrhages, the most characteristic of which are of the minute punctuate type. The retinopathy occurs in people past middle age and is usually accompanied by more or less marked retinal angio-sclerosis. In children and young individuals lipemia retinalis may be present in severe diabetes with a blood sugar of 5 per cent. or more. The retinal arteries are pale and the veins which normally are darker than the arteries approach the latter in color. Typical diabetic cataract occurs in young indi-

viduals, up to the age of thirty-six years, while the incidence of cataract in patients over sixty years is greater in diabetics than in those who have no diabetes. Changes in refraction occur not infrequently in diabetes. This is a result of changes in the aqueous sugar content which, according to some authors, acts directly on the lens by increasing the osmotic activity, while according to others it causes a swelling of the ciliary epithelium and a relaxation of the zonular fibres. The change in the refraction may be in the direction of an increase in the myopia, so that a hyperopic eye may become less so or a myopic eye more myopic but an increase in hyperopia can also occur. Iridocyclitis and chronic retrobulbar neuritis are well known complications of diabetes. Extra ocular muscle palsies also occur, especially when the diabetes is associated with hypertension and arteriosclerosis. Grafe states that the prognosis for recovery from the palsy is bad in these cases.

GONADS

Ovarian dysfunction or removal of the ovaries leads to premature presbyopia according to Guillot.[17] This possibility should be borne in mind in doing refractions in middle-aged women. Vague complaints such as momentary blurring of vision, inability to use the eyes for near work, a feeling of heaviness of the lids, etc., may be accompanied by no definite errors of refraction or only by low degrees of muscular imbalance. The muscle balance tests may be normal but fatigue occurs after moderate use of the eyes. The eye symptoms then may be much like the general symptoms in these patients and relief will be obtained only on proper endocrine therapy.

Pregnancy, lactation and menstrual disturbances may cause acute retrobulbar neuritis or even papillitis and papilledema. Conjunctival hemorrhages, episcleritis, and iridocyclitis are known to accompany menstrual disorders.

Vogt and others believe that certain forms of cataract (coronary cataract) develop at the age of puberty and some writers go so far as to believe that gonadal hypofunction is the cause of senile cataract.

ADRENALS

Hypofunction of the adrenal glands (Addison's disease) is sometimes accompanied by a dark pigmentation of the conjunctiva and even cornea. The pigment, according to Amirle's[18] and Matsuoka's[19] histological examinations is melanin. A. L. Brown[20] found, in addition to pigmentation of the conjunctiva a dark gray pigmentation around the discs and maculae which he explained on the theory that these parts of the fundus are more exposed to strong light and therefore, like the exposed portions of the skin, they become pigmented. His patient had a low intra-ocular tension (12 and 11 Hg. Schiotz) and widely dilated pupils as a result of sympathetic irritability. Myopia and glaucoma have been attributed to deficiency of the adrenal glands.

LIVER

Night blindness and xantopsia may occur in diseases of the liver. In Hirschberg's case the yellow vision recurred with each menstruation. Numerous other eye lesions, as enumerated by von Szily[21], have been ascribed to a disturbance of the endocrine system.

COMMENT

There is no doubt that many eye diseases are a result of a disturbance or disease of the glands of internal secretion. Some of them, like diabetic retinopathy and proptosis in exophthalmic goiter are universally recognized to be on that basis. We are likely to forget however, that others such as iridocyclitis, idiopathic blepharospasm, accommodation insufficiency and many others may also be caused by an endocrine disturbance. It would be well if an examination of the endocrine system were made part of the routine physical examination when searching for a possible systemic cause of diseases of the eye such as iridocyclitis, papillitis, retrobular neuritis and others. The ophthalmologist should also bear this etiological factor in mind when treating intractable cases of asthenopia, epiphora, blepharospasm, recurrent chalazia and other conditions that persist in spite of the usual medical management. In some of these the endocrine disturbance is the actual cause of the eye disease while in others it throws the reparative defense mechanism out of equilibrium so that the usual medication is of no avail.

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ROENTGENOLOGICAL MANIFESTATION OF ENDOCRINE DYSFUNCTIONS

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INTRODUCTION

Soon after the discovery of Roentgen, anatomists realized that the new rays would enable them to study the skeletal development in the living subject. It was not until recently, however that enough material was collected to allow them to establish with sufficient accuracy the normal growth of the skeleton. While this work of collecting radiographic records of growing children was being done it was discovered that certain children showed a bone age entirely different from their real age. Endocrinologists were able to correlate the retarded or accelerated bone growth of these children with dysfunctions of their endocrine systems.

In a general way it is possible to divide the endocrine dysfunctions which affect skeletal growth in two great classes: (a) dysfunctions which accelerate growth, making bone age greater than the real age, and (b) dysfunctions which retard the growth of the skeleton, making the bone age less than the actual age of the patients.

For the sake of clarity it must be understood that the terms "acceleration of growth," and "retardation of growth" refer only to time and not to the length of the bones. For instance eunuchoids are as a rule quite tall while they show retardation of growth because of late epiphyseal union.

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DYSFUNCTIONS WHICH ACCELERATE SKELETAL GROWTH

Hyperfunction of the adrenals, of the pineal gland and of the gonads results in an acceleration of the skeletal growth in young subjects. All these dysfunctions are also characterized by precocious development of the external genitalia, with early puberty and correspondingly early mental development. The demonstration of the advanced bone age of these children is easily done by examining roentgenograms of the wrist. The slide shows the wrist of a five-year old patient with cortical adrenal hyperfunction in which the bone age was between 13 and 14 years. The next slide shows the patient himself as compared with a normal boy of 14. The following slide shows the wrist of another patient, a girl with a granuloma cell tumor of the ovary who had a bone age of 17 years and an actual age of 12. This patient menstrnated at five months and showed public hair and mammary development at two years.

Roentgenograms showing accelerated growth of the skeleton do not give any clues as to whether the adrenals, the gonads or the pineal gland are the cause of such abnormal development. A careful clinical examination is therefore imperative and it must be remembered that the direct roentgenological investigation of the endocrine system may give valuable information; this will be discussed later in this paper.

DYSFUNCTIONS WHICH RETARD SKELETAL GROWTH

Retardation of bone growth is mainly due to hypofunction of the thyroid, of the hypophysis or of the gonads.

In juvenile myxedema the children are of small stature, obese, with retarded mental development; the skin is dry, the hair scanty and coarse, the face flat, puffy and the tongue unusually large. The slide shows a boy with myxedema whose real age was 13 years and whose bone age was only about six months. Lesser degrees of hypothyroidism may not affect the skeletal growth to a marked extent but many cases of coxa vara have been recently attributed to hypofunction of the thyroid gland.

Hypofunction of the hypophysis also produces a marked retardation of the growth of the skele-

ton but these patients do not show the puffiness or obesity of myxedema. They are of small stature but slender; while their mental capacities are not impaired they always show an arrest of their sexual development. The slide shows side by side an 18-year old patient suffering from hypophyseal hypofunction and a normal 18-year old boy. The following slide shows that the bone age of this patient is only 13 years.

While the hypofunction of the hypophysis and that of the thyroid usually result in dwarfism, the hypofunction of the gonads produces individuals of normal or excessive stature, slender, with flat chests, long hands and feet. The genitalia and secondary sex characteristics remain infantile and puberty may never occur. The epiphysis may not unite until 30 or 35 years of age and the skeleton has thus a chance to continue to grow. The slide shows one of such patients, a pre-adolescent eunuchoid 34 years of age, compared with a normal 34-year old woman. The following slide shows normal nuclei but there is lack of union of the radial epiphysis.

In addition to endocrine dysfunctions the skeletal growth may be disturbed by other conditions, such as rickets, achondroplasia, renal dwarfism and Mongolian idiocy. All these conditions have characteristic clinical symptoms and some show unmistakable roentgenological signs which help to differentiate them from the known endocrine diseases.

ROENTGENOLOGICAL MANIFESTATIONS OF ENDOCRINE DYSFUNCTIONS IN ADULTS

The influence of the endocrine glands on the skeleton does not cease with the cessation of the skeletal growth. In the last few years it has been definitely demonstrated that the hyperfunction of the parathyroid glands produces a marked loss of calcium in the adult bones accompanied by the formation of bone cysts and occasionally by spontaneous fractures. The slides show that this decalcification of the skeleton is quite characteristic and consists of a granular mottling, especially observed in the vault of the skull and the diaphysis of the long bones. The skeletal decalcification is accompanied by a great increase in the calcium level in the blood and this may lead to the formation of kidney stones. The slide shows this renal pathology as demonstrated by the roentgenogram. Acromegaly, another disease of adult life, also causes marked skeletal changes. The slide shows, in addition to the sellar destruction, the enlargement of the facial sinuses and of the jaw occurring in this disease. Hands and feet also enlarge.

The hyperfunction of the basophilic portion of the pituitary gland and the hyperfunction of the adrenal cortex result in a similar clinical syndrome and both can produce a most marked degree of osteoporosis. Marked osteoporosis is also occasionally observed in advanced cases of exophthalmic goiter.

In the adult myxedematous patient there is another change which can be recognized by the roentgenologic examination and consists of an enlargement of the heart which will recede with the administration of thyroid extract.

DIRECT ROENTGENOLOGICAL INVESTIGATION OF ENDOCRINE GLANDS

The direct investigation of the endocrine glands is a rapidly growing field of roentgenology.

Because of its position in the bony sella turcica the hypophysis was probably one of the first glands to be explored with the roentgen ray; it was soon found that pituitary tumors would almost always cause a destruction of the floor of the sella or of the clinoid processes or produce a concentrical sellar enlargement. The slide shows one of such cases.

The pineal gland is roentgenologically invisible in children and adolescents but it becomes visible in about 50 per cent. of the adults because of calcium deposits. Once this gland becomes visible it also becomes of great roentgenological importance because its position, normally quite constant, may be altered by intracranial growths. Tumors of the pineal itself are susceptible of direct roentgenological diagnosis only when they are calcified. The slide shows one of these rare growths. Frequently, however, pineal tumors give no direct roentgenological signs or only the indirect signs which are common to all intracranial growths of sufficient volume such as increase of the digitations of the calvarium, pressure erosions of the sellar floor, or displacement of the calcium deposits which usually mark the normal position of the pineal gland.

The thyroid becomes of roentgenological in-

terest only when it hides itself behind the sternum. The slide will show that it appears in the roentgenogram of the chest as an enlargement of the anterior upper mediastinum with frequent displacement of the trachea.

Parathyroid tumors are seldom large enough to be palpable in the neck but occasionally they may reach such volume as to plunge into the anterior upper thorax where they cannot be differentiated roentgenologically from an intrathoracic thyroid.

The roentgenological diagnosis of thymic hyperplasia has recently been subject to much well founded criticism. From the evidence presented so far there seems to be no doubt that the so-called thymic syndrome has been greatly overemphasized. From a roentgenological diagnostic standpoint one must remember that a large upper mediastinal shadow in a roentgenogram of the chest (such as shown by the slide) does not always mean an enlarged thymus, because the width of the upper mediastinum changes greatly with the position of the patient and with the phase of respiration, and becomes quite large when the children cry due to the engorgement of the venous vessels. A great amount of caution should be exercised before a diagnosis of thymus enlargement is expressed, especially because such a diagnosis is usually followed by roentgen therapy and this may have untoward effects later in life.

The roentgenological diagnosis of adrenal diseases has been recently added to our armamentarium. In Addison's disease one often finds calcifications in the adrenal regions such as shown by the slide. Hypertrophies and tumors of the adrenal may be diagnosed because of the displacement of the underlying kidneys or by producing an artificial contrast around the glands by means of the injection of a gas in the perirenal space. The slide shows a case of hypertrophy of the right adrenal cortex with Cushing-like syndrome. The following slide shows a medullary tumor which caused paroxysmal hypertension.

CONCLUSION

In conclusion it may be said that there are many cases in which roentgenological studies of endocrine diseases are indispenable and of capital importance; in many other cases roentgenological studies may prove to be of great help to supplement the clinical symptoms and support the clinical diagnosis.

SUMMARY

The author discusses the roentgenological manifestations of endocrine diseases. He presents illustrative roentgenograms of cases of tumors and dysfunction of the hypophysis, enlargement of the thymus, enlargement and dysfunction of the thyroid, tumors of the parathyroid glands, enlargement and tumors of the adrenal glands and endeavors to establish the indications for the roentgenologic examination.

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X-RAY THERAPY AS APPLIED TO THE MORE COMMON FORMS OF DISTURBANCES OF THE ENDOCRINE GLANDS

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Heinz, Langer[1] stated, "If a roentgenologist intends to treat diseases of the glands of internal secretion, it is well for him to realize that a tremendous field for exhaustive study lies before him, before he may even think of actually treating some of his trusting patients with roentgen rays."

Gordon[2] says, "The necessary requisite for radiotherapy directed against any endocrine gland is primarily a knowledge of the underlying existing disease, but unfortunately, that is not always possible, at the present time, with endocrine disorders. At the best, any present endocrine treatment must be empirical."

Langer[1] further states, "if we understand by 'empirical' that every effort and every laboratory test has been made to accomplish the right diagnosis, and that the examination and symp-

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toms point to a certain gland of internal secretion being in a stage of overactivity; if all efforts are made to rule out infections or other diseases which might influence an overactivity in these glands, then by reason of the meager knowledge we have about the diseases of internal secretion, an empirical treatment may be allowed." In addition consultation should be made with the internist, neurologist, and others who might give aid in the diagnosis.

Cawidies[3] states, "That the action of physical agents on endocrine function is effected through four distinct mechanisms, acting often in combinations, (1) the ionic equilibrium mechanism, (2) skin endocrinotropic mechanism, (3) the nervous reflex mechanism, and (4) the direct glandular mechanism. X-ray produces these effects through a depressing influence."

The glands considered here are the pituitary, the thyroid, the parathyroids, the thymus, the adrenals, and the ovaries. Time and space are too limited to enter into a discussion of the anatomy, physiology, and pathology of the disturbances of these glands, as they can be readily obtained from any standard text.

The disturbances of the endocrine functions for which the pituitary gland is treated are essential hypertension and diabetes mellitus, amenorrhea, sterility, menopausal symptoms and tumors.

Hutton[4, 5, 6, 7] and others believe that essential hypertension and diabetes mellitus are due to some functional abnormality of the pituitary and adrenals or both. They have applied small doses of x-ray to these glands and report that about seventy-five per cent. of the cases improved symptomatically. They have found that the dosage of x-ray is very small and the method of treatment is as follows: 120 KV., 3 Ma., 2 Mm. Alum. filter, and 50 cm. skin target distance. With these factors fifty "r" are delivered to each side of the pituitary through ten by ten portals and to the adrenals through a common portal fifteen by fifteen centimeters. Three treatments are given at weekly intervals and if there is not a drop in pressure the dosage is increased to seventy "r" to a portal. They stated that about one-third of the cases received no benefit, one-third slowed symptomatic improvement with a little change in the carbohydrate tolerance, and one-third obtained symptomatic relief and marked improvement in carbohydrate tolerance. The reduction in blood pressure was from twenty-five to one hundred points. Other authors report approximately the same percentage of symptomatic relief.

In the treatment of amenorrhea and sterility, Kaplan[8], uses the following technique: 200 KV., 4 Ma., filter Cu. ½ plus A1-1, and distance thirty to forty cm. Two pituitary fields six by eight and four pelvic fields nine by twelve or ten by fifteen centimeters are used. Seventy-five to one hundred and fifty "r" measured in air are delivered per field. One treatment per week is given for three weeks. In a series of one hundred and twenty-eight married women menstruation was established in seventy-six, and forty-four became pregnant. He noted no harmful effects of treatment and the children born to these women were normal mentally and physically. Ford[9] reported menstruation was established in twenty-six of the forty-seven cases treated. Of twenty-nine cases treated for dysmenorrhea, he states that relief of pain was noted in eighteen. The duration of relief was variable, but results were as long as three and a half years. He states that repetition of treatment at intervals of three months or longer has not adversely affected ovarian function.

The treatment of menopausal symptoms with x-ray has been widely used, and the usual symptoms of sweating, vertigo, hot flashes, and headaches were relieved. The pseudo-arthritic pains, often present, are not affected by treatment.

Geist[10] reports seventy-five patients treated and twenty-five used as controls with results as follows: Ninety per cent. lost the temporal hair, in eighty-five per cent. sweating was markedly decreased, in seventy-five per cent. headaches improved or disappeared, in ten per cent. palpitation on exertion was improved. Pseudo-arthritic pains were not relieved. It was found that improvement was not actually of a permanent nature, but lasted from intervals of some two to six weeks. A few of the cases received as many as seven series of treatments, but it was not deemed adviable to continue any further treatment. The technique of the treatment used was: 180 KV., Ma. 4, Cu. ½ plus A1-1, and distance 40 cm. Six by eight centimeter portals were used on the right and left temporal and frontal re-

gions. One hundred and fifty "r" was delivered to each area.

Zollinger and Vaughn[11] reported, "That thirty-five per cent. of the cases of menopausal symptoms improved by x-ray treatment."

The indications for treatment of tumors (adenomata) of the pituitary as given by Pohle[12] are evidence of early pressure signs without signs of advanced optic atrophy. He recommended Pfaher's technique which is as follows 200 KV., ½ to 2 mm. of copper filter, 40 to 50 cm. focal skin distance, and 4x5 cm. portals on each temporal region and through the frontal and interocular regions. He says in cases of slowly developing symptoms it is advisable to use the relatively small doses over a longer period of time, using seven hundred and fifty "r" in air as an erythema dose. He states that twenty-five to fifty per cent. of the erythema dose through each portal, and repeated weekly, can be given or if the tumor has been operated upon and relief of intracranial pressure established, the dose can be increased to three hundred and fifty "r". Two fields are treated daily or every second day until the total dose amounts to one thousand and fifty "r" per area. This dosage is apparently sufficient to induce regression in "adenomata."

X-ray treatment of the thyroid gland is now an established procedure. Brahm[13] states, "That toxic adenoma should be treated by x-ray, rest, diet, and medical means in cooperation with the surgeon in preparation for a thyroidectomy and that an exophthalmic goiter (Graves' Disease) is best treated by x-ray in conjunction with the internist." Severinghaus[14] urges the use of radiation when need for haste is not apparent or the operative risk is poor. He states that radiation results are usually obtained from one to three months following treatment and that the end-results of x-ray treatment are as good as with surgery. He further states that recurrences are known with both methods. Newman and Garland[15] use the following technique: 200 KV., Cu. ½ plus A1-1, 50 cm. distance, one anterior field 14x17 with trachea covered with a narrow strip of lead, administering 200 "r" every second or third day, up to a total dosage of 2000 "r" in air. They reported the following results and conclusions: "While we are not presenting the x-ray and iodine therapy of hyperthyroidism as the only, or even under all circumstances as necessarily the best form of treatment, we feel that it has the following to recommend it. (1.) It will result in 60 per cent. cures as evidenced by: (a) disappearance of the symptoms of hyperthyroidism; (b) economic restitution; (c) basal metabolic rate of plus 10 per cent. or below; (d) basal pulse rate of 80 or below; (e) gain of weight to near former average. (2.) In another 28 per cent. it will afford marked improvement. (3.) Thus, in well over 80 per cent. the results are satisfactory. (4.) There is no direct mortality nor complication to the treatment. (5.) The patients are usually ambulatory and often continue working during treatment. (6.) It is speedy; definite improvement often occurs by six weeks and usually by three months. (7.) If it fails after a reasonable trial, surgery can be employed. (8.) It can, at times, be applied to patients who for economic or psychological reasons refuse to consider surgery."

The parathyroid glands are usually treated for hyperfunction which may be due to a simple hyperplasia or to tumor formation. The overactivity of the glands is usually manifested in a more or less generalized osteitis fibrosa cystica with elevated blood calcium and a lowered phosphate elimination in the urine.

Pohle[12] and other authors report excellent results by radiation. The technique of treatment is two anterior and two posterior fields over the neck, 180 KV., 4 Ma., filter Cu ½ mm. plus A1-1, and distance 30 cm. Seven hundred "r" are given to each field allowing an interval of two days between the applications to each field. A second series may be given three to four months later. If this does not produce any results surgery should be undertaken.

The usual conditions for which the thymus gland is treated are hyperplasia, status lymphaticus and lymphosarcoma.

Kerley[16] in a group of twenty-seven normal children, gave prophylactic treatments through an anterior and posterior field, thirty-five "r" being administered per field. The cases were given three treatments at intervals of three to seven days. He concluded, that irradiation of the thymus in infants and young children produces no retardation of physical growth or mental development.

Pohle[12] states, "That generally the enlarged thymus gland is observed from the first week after birth to about the second year, but it still can be found much later than childhood. There

is no doubt that the enlargement of the thymus gland can cause death directly or indirectly." The recommended technique is 120 KV., 5 Ma., 25 cm. distance, 3 mm. Alum. filter, and portals 4x5 cm. over the thymus area. One hundred and fifty to two hundred and eighty "r" may be given. The treatment may be repeated at the end of four weeks if the films still show enlargement of the thymus. The improvement of symptoms may begin as early as twelve hours. The treatment should not be repeated as long as signs of improvement are seen. The treatment of status lymphaticus is the same as for enlarged thymus, except that the treatments may have to be repeated at intervals.

In the treatment of tumors of the thymus, particularly thymoma, the tumor must receive a dose of at least seven hundred "r," but usually in children it is not possible to effect complete regression without damaging future development of the child.

Suprarenal glands are treated for hyperactivity, usually caused by tumor formation, and for neurocirculatory asthenia. Their treatment in hypertension has already been discussed. The treatment of the suprarenals has also been used in conjunction with the treatment of hyperthyroidism. The technique in treating tumors is 200 KV., 5 Ma., filter, Cu. ½ mm. plus A1-1, distance 50 cm. and 10x10 portals over the adrenal area. Each field receives three hundred and fifty "r" given on successive days. The treatment may be repeated at intervals of four weeks, if improvement is noted.

The treatment of the ovaries is absolutely contraindicated in pregnancy. The conditions which are usually amendable to radiation are benign uterine hemorrhage, painful menstruation, fibromyoma, chronic infections of the uterus and adnexa, and carcinoma of the breast. In treating painful menstruation, the dosage is comparatively small, usually one hundred and fifty "r" is given over one anterior and one posterior field using 200 KV., 5 Ma., filter ½ Cu. plus A1-1, 50 cm. distance, and 15x15 portals. Chronic infections of the uterus and adnexa are treated in the same manner.

Siefert[17] believes, "That radiation of chronic infections of the female genital tract may save surgical removal of the genitalia in young individuals." Benign uterine hemorrhage and uterine fibroids are treated with 200 KV., 5 Ma., ½ Cu. plus A1-1, 50 cm. distance, and 15x15 portals. One anterior and one posterior portal is used and radiation is given at the rate of two hundred "r" per portal, allowing two to three days between treatments. Eight hundred to twelve hundred "r" administered to each portal will usually produce satisfactory results. The treatment of the ovaries in cases of cancer of the breast is recommended by Witherspoon[18, 19, 20] and others. It is believed to be of especial benefit in young women who have not reached the menopausal age. A castration dose has to be administered and this dose is variable according to age. According to Pohle[12], it requires, in women from twenty to twenty-five, thirty-one and nine-tenths per cent. skin erythema, and decreases to twenty-two and four-tenths to sixty, to produce permanent menopause using 200 KV., with ½ mm. plus A1-1.

CONCLUSIONS

From the foregoing review of the experiences of numerous physicians with the use of radiation in the treatment of endocrine disturbances. it will be noted that correct diagnosis is most essential and stressed by all of them. None of them believe that radiation should be undertaken, except after the most careful study and examination of the patients, and this is only obtained by using all available methods and consultations with the various specialties.

It is believed that radiation applied in a careful and intelligent manner will be of decided and distinct benefit in these conditions.

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THE EYEGROUND IN HYPERTENSIVE AND RENAL DISEASE

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Ophthalmoscopic examination gives us the unique opportunity to observe in great detail and in the living body an entire vascular system, and this examination gains in importance when the question of a generalized organic or functional alteration of the blood vessels arises. Systematic observation of the retinal vessels has added considerably to the understanding of the hypertensive and renal diseases, and gives valuable information concerning their diagnosis, differential diagnosis, and prognosis.

One of the most frequently encountered forms of hypertension is the so-called benign essential hypertension. While the systolic blood pressure is considerably increased, the diastolic pressure remains normal or rises only slightly, and the renal function is undisturbed. It is mostly an affliction of older people. There is a decrease of elasticity of the large arterial branches throughout the body, which makes reception of the blood volume at each heartbeat increasingly difficult, and leads to a passive dilatation of the peripheral arteries, arterioles, and capillaries, including those of brain and retina.

The ophthalmoscopic picture in the very early stage of this type of hypertension is often normal. Soon, however, signs of the hypertonic fundus develop, which permit the experienced ophthalmologist a rather early diagnosis of benign esential hypertension. The hypertonic fundus is characterized by the following features:

1. The retinal arteries and veins are moderately distended and coarsely tortuous. This dilatation of the arterial and venous vascular tree can be traced to the smallest, ordinarily scarcely visible branches, thus their number seems increased.

2. The retinal vennles have a corkscrew appearance (Guist, Salus).

3. The normal ratio of the arterial to the venous diameter is altered from the normal of 2:3 to 2.5:3, or even 3:3 Thiel).

4. The reflex stripe on these widened arteries also becomes wider and of a yellowish color, a condition which is commonly called a "copper-wire" artery, and which is thought to be already a sign of incipient arteriosclerosis.

5. An important diagnostic sign is the hypertensive arc at the vascular crossings, first described by Gunn, but correctly interpreted by Salus. This hypertensive arc differs from the arteriovenous compression in simple arteriosclerosis. It may be produced merely by spastic contraction of the artery, without visible sclerotic changes of the involved blood vessels. It is characterized by an apparent narrowing of the vein before and after the crossing, without congestion of the peripheral portion of the vein. The vein simply evades the direct pressure of the rigid artery by deviating backward into the retina (Salus, Friedenwald). While the absence of this sign does not exclude the existence of arterial hypertension, especially the intermittent forms, its presence is pathognomonic of it.

At this stage two other retinal conditions come into consideration for differential diagnosis. One is the congenital tortuosity of the retinal vessels, the other is the cyanosis retinae found in congenital heart disease and in polycythemia vera.

In the later stages of benign essential hypertension the fundus picture is characterized by a progressive retinal arteriosclerosis and its consequences, in addition to the hypertensive findings. Further complications of this retinal vascular disease may be occlusion of venous branches, or even of the central vein (Koyanagi, Salus).

What conclusions as to course and prognosis of the patient's general condition can we draw from the study of the fundus? To answer this question, the age of the patient has to be considered. If these fundus lesions are found in older people, which is usually the case, the degree of retinal vascular sclerosis and its rapid or slow progress may be considered an indicator of similar processes taking place in other organs as brain, kidney, or heart. In spite of the sometimes rather severe retinopathy, these patients

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may live for many years, and they do not die from renal insufficiency but from cerebral or cardiac complications of the cardiovascular disease.

It is different in the younger individual with benign essential hypertension. Here an increase of diastolic pressure may set in gradually, as the arterioles have so far preserved their ability to respond to the over-extension of the prearterioles by increase of their tone. Thus a transitional form to the malignant essential hypertension gradually develops, with generalized spastic contraction, at first, of the arterioles, and later of the arteries, and a high diastolic blood pressure (Volhard).

The malignant esential hypertension or malignant nephrosclerosis, in which both the systolic and diastolic blood pressure are considerably increased, and renal function in the later stages is progressively impaired, is characterized by a generalized contraction of the arterial vascular tree, beginning with the arterioles and progressing to the larger branches.

The ophthalmoscopic picture in the early stages of this hypertension is also characterized by:

1. A uniform contraction of the retinal arterioles and arteries, which may be so marked that at the first glance one seems to see nothing but veins.

2. The relation of the arterial to the venous diameter now approaches 1.5 : 3 or 1 : 3. If one follows the course of such an artery from the disc toward the periphery, one finds that its larger branches are barely visible, and the arterioles appear wiped out altogether.

3. The arterial reflex stripe becomes more intensely white, giving the artery a "silverwire" appearance. This contraction of the arteries is at first of spastic nature, and intermittent spasm is sometimes observable with the ophthalmoscope.

4. At the vascular crossings there are usually well developed hypertensive arcs.

5. The retinal veins retain at first their normal caliber, except for slight narrowing of the venules, but they never show the corkscrew appearance seen in the benign essential hypertension.

A prolonged contraction of the arterioles leads to slowing of the blood stream and insufficient nutrition of the vessel walls, which results in an increased permeability of the walls. The first evidence of this damage is edema of nervehead and retina, and later hemorrhages and aluminous and fibrinous exudates, which appear as more or less extensive yellowish or greyish white patches. As the retinal arteries are end arteries, also the nutrition of the retina suffers, and clinical manifestations of this damage are degenerative lesions of two types: 1. Brilliant white, small, sharply defined lesions, which by confluence may form arborescent figures. The underlying pathology is an infiltration with fatty granular cells.

2. Fluffy, dull white areas with serrated margins, which are caused by hypdropic degeneration, the so-called ganglio-form degeneration of nerve fibres.

The ophthalmoscopic picture in this end-stage of the malignant hypertension is a fully developed hypertensive neuroretinopathy, to the characteristic features of which a marked degree of visible angio-sclerosis is usually added. This sclerosis is most marked in the retinal arterioles. Not infrequently choroidal sclerosis is visible in the periphery of such fundi, causing "bead string" pigmentations.

The presence of a fully developed angiospastic neuroretinopathy in malignant hypertension is of grave prognostic import as to the life of the patient, and statistics show that few patients live longer than 18 months to two years after its development.

The question arises, what other diseases produce the ophthalmoscopic picture of hypertensive neuroretinopathy? The answer in general is all those in which arterial hypertension is associated with a generalized contraction of the arterioles of the body. The most classical example of such a condition is the acute, diffuse, glomerulonephritis. The first ophthalmoscopic sign is again a contraction of the retinal arterioes and arteries, and after some time the other features of the neuroretinopathy develop. As the contraction of the arteries is at first spastic, the retinal symptoms may completely disappear if recovery from the renal disease and hypertension takes place.

If the acute glomerulonephritis does not subside, but gradually passes into the subacute and chronic forms, the functional condition of the retinal arteries gradually gives way to permanent alterations of the vessel walls, which are clinically visible as more less pronounced angiosclerosis. The first transient retinal symptoms re-

appear and become intensified. Development of a neuroretinopthy in chronic glomerulonephritis, just as in malignant nephrosclerosis, gives a grave prognosis, as it is indicative of such a high degree of generalized vasoconstriction that complete renal insufficiency and uremia are imminent.

Another condition which may produce an angiospastic neuroretinopathy is toxemia of pregnancy. As in the acute glomerulonephritis, the first opthalmoscopically visible symptom is a spastic contraction of the retinal arterioles and somewhat later of the arteries (Wagener, Selinger). If this contraction becomes generalized, and persist, neuroretinal edema and other changes develop rapidly. Up to a certain time, which may vary from days to weeks, complete regression of the retinal findings may be expected if the pregnancy is terminated and the blood pressure returns to normal. If too much time passes after the spastic condition of the retinal vessels has once been confirmed, irreparable damage to retina and vessels is done, the evidence of which is a progressive and intensified neuroretinopathy. Therefore frequent ophthalmoscopic examination of patients with toxemia of pregnancy, especially in the early stage, is imperative.

One of the most interesting points to the ophthalmologist as well as the internist is the question whether certain fundus findings coexisting with and modifying the picture of hypertensive neuroretinopathy permit any conclusions as to the origin of the hypertensive disease, i.e., whether it is:

1. A malignant development of benign essential hypertension, a socalled transitional form, or; 2. A malignant essential hypertension in malignant nephrosclerosis, and development of a primary contracting kidney, or; 3. The end-stages of a chronic nephritis, a secondary contracting kidney.

Although this question cannot be answered absolutely in the affirmative, there are certain findings whose presence or absence suggest certain types of hypertension.

Ad. 1. In the transitional form, there is in addition to the features of the neuroretinopathy a permanent corkscrew appearance of the venules, a condition which was produced during the benign stage of the hypertension by elongation of the small veins, which is not reversible. This finding is always absent in the other types of hypertensive retinopathies.

Ad. 2. The picture produced by malignant hypertension on the other hand often differs from that in acute and chronic glomerulonephritis, and toxemia of pregnancy. The edema of nerve and retina appears greyish and semi-transparent, and there is not infrequently a marked swelling of the optic nerve head, such as one is accustomed to find in choked disc. Exudates in the retina around the nervehead are less extensive than in nephritic disease. Accompanying arteriolar sclerosis is more marked in malignant hypertensions.

Ad. 3. In acute and chronic glomerulonephritis and toxemia of pregnancy the exudation is more extensive, more massive, and appears whiter, perhaps due to its more fibrinous character, which is prominent in the histologic preparations. The retinal vessels have a greater tendency to be maximally contracted in these conditions than in essential hypertension. In chronic glomerulonephritis one often has the additional findings of secondary anemia, which may be quite marked, and manifests itself in a pallor of the edematous nervehead and in hemorrhages with light centers as found in other severe anemias.

It is evident from the preceding discussion that ophthalmoscopic examination has to be made in great detail, and usually repeatedly, to be of maximum value. Important information as to diagnosis, differential diagnosis, and prognosis of many diseases, especially the renal and hypertensive group, may thus be obtained.

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DISCUSSION

Dr. Elias Selinger, Chicago: Dr. Klien's presentation was most able, the discussion describing the fundus changes and their significance, while the original paintings showed both the fundus and histologic changes. Clinicians generally agree on the clinical significance of the fundus changes in hypertension. There is no difference of opinion on the interpretation of these findings but there is some difference in regard to the classification of the various hypertensive diseases. Personally I prefer the classification in which the first group of Dr. Klien's cases which she refers to as benign hypertension in old individuals is placed in the group of arteriosclerotic hypertension, since here the condition is brought about by sclerosis of the larger vessels. The term essential hypertension is reserved for a special entity. Some clinicians divide essential hypertension into benign hypertension and malignant hypertension, depending upon whether the vessel changes are functioal in character, so that they are still reversible and for that reason the patient will again, under treatment, show a normal blood pressure, or whether the changes are organic in nature, so that a return to normal is impossible. We then have a more or less continuous picture of hypertension. Essential hypertension, the type that is found in young and middle aged individuals, generally begins as a spastic contraction of the smaller arteries and arterioles. This is the result of vascular reaction to toxic substances, possibly produced by the kidneys, possibly coming from other sources. As a result of this contraction, the heart has to do extra work, and in that way the hypertension is brought about. Soon there is thickening of the media of the arterioles and small arteries, but up to this point the process is still reversible, and for that reason this stage is referred to as benign hypertension. Sooner or later organic changes develop, such as fibrosis and sclerosis of the media, and hyperplasia of the internal elastic lamina, and then the process has become organic, is not reversible, and the typical fundus picture of malignant hypertension may become evident.

This same process takes place in other areas of the body and seems to be particularly marked in the kidneys. For that reason the disease is sometimes referred to as malignant nephroclerosis. The histologic vascular studies carried out by Anderson, Keith, Kernohan and others in this country have been beautifully illustrated by Dr. Klien in her fundus paintings, and paintings of histological specimens. Rosenberg of the Mayo Clinic recently described the findings in the brain in cases of malignant hypertension. The vascular changes are similar to those found in the eyegrounds. Not infrequently the changes in the ocular vessels are indicative of similar changes in the cerebral vessels. Rosenberg examined histologically the cerebral vessels from seventeen cases of malignant hypertension and found beside the typical vascular changes, other changes such as petechial and larger hemorrhages, and in some cases massive hemorrhages into the ventricles. Those cases that showed marked change of the nerve head, which comprised 11 out of 17, had either increase in the spinal fluid pressure or edema of the brain. According to Pickering, an increase of cerebrospinal pressure above 25 cm. of water in these patients is very significant, since the life expectancy in these patients is only ten months.

From the ophthalmoscopic point of view the hypertensive changes in the fundus manifest themselves, as Dr. Klien pointed out, in vascular changes, later in sharply circumscribed exudative and degenerative changes in the retina, and when nephritic damage becomes evident as a result of the marked vascular change in the kidneys, then the so-called cotton wool exudates will be added and edema of the nerve head will form part of the ophthalmoscopic picture. Dr. Klien mentioned intermittent spasms of the arterioles. This is an important clinical finding as it indicates that the vessels have as yet no marked organic changes, and for that reason the prognosis in these cases should be better. Once in a while we come across a patient who shows typical hypertensive vascular changes in the eyegrounds and yet the blood pressure is normal. Such patients frequently have a cardiac decompensation so that there actually is a relative hypertension.

Closing the discussion of the paper, "The eyeground in hypertensive and renal disease:"

Bertha A. Klien, Chicago: Dr. Selinger mentioned one of the difficulties we have in talking about hypertension, i. e., its classification. Volhard's classification was used as the basis for this paper, but the terminology of hypertension is of minor importance in the practical application of the knowledge gained by detailed fundus examination regarding the diagnosis, differential diagnosis, and prognosis of the individual case.

THE USE OF PROGESTIN IN OBSTETRICAL COMPLICATIONS

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For the past fifteen years or more, in connection with my teaching program, I have defined pregnancy as a physiological internal glandular dystrophy. I have done this to impress upon the students the important part played by the glands of internal secretion in the process of reproduction. Recent research has supplied abundant proof of the correctness of this conception. Certain pathological states occurring during pregnancy can best be explained by the assumption of dysfunction of some of the endocrine glands. Since it would take us too far

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afield to cover even sketchily the important relationship of all of these glands to the process of reproduction, I have chosen for discussion a single hormone (progestin). I will try to point out some of the facts regarding its action on the human uterus and how this knowledge may be applied clinically in the treatment of patients manifesting certain obstetrical abnormalities.

Progesterone is the hormone extracted from the corpus luteum. It has an inhibiting action on uterine contractions and it produces. when injected into suitable immature test animals (rabbits), a progestational change in the endometrium. We have recently established the fact that certain oily extracts have an inhibiting action on uterine contractions which have been previously stimulated by pituitrin. We have further shown that the water soluble substances in the early preparations of corpus luteum extract contain appreciable amounts of progesterone and can be used clinically in certain obstetrical complications. The object of this paper is to demonstrate the action of this hormone on the living human uterus in situ and to point out the clinical application of the knowledge thus obtained.

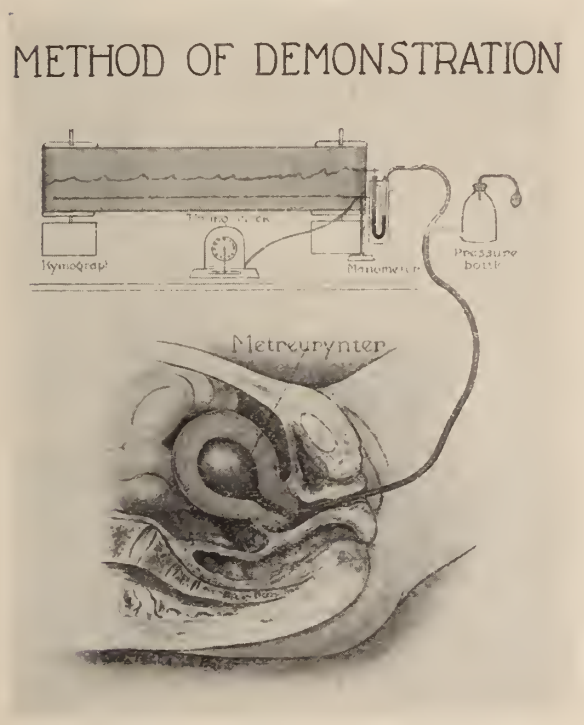


Fig. 1. Method of demonstration.

Figure 1, the method used was essentially that of Moir which consists of placing a rubber balloon in the uterus of a woman seven days post partum and recording the uterine contractions by means of a kymographic tracing. Pituitrin was used to stimulate active uterine contractions. The promptness of action of the various progesterone-containing preparations is readily seen from a study of the tracings. When pituitrin is injected alone the uterus promptly responds by developing rhythmic uterine contractions which continue for at least an hour or two without change in rate or rhythm. If now pituitrin is injected in the same amount and is followed by an injection of one rabbit unit of progestin (oily extract), a prompt response in the form of inhibition of uterine contractions is noted. The aqueous solutions were less prompt in producing the inhibiting effect, but there is no reasonable doubt regarding their efficiency.

There is a group of obstetrical complications which seem to depend upon abnormal uterine contractibility. The stimulus for this abnormal irritability may come from various sources, but the end-result is the same in all cases—the emptying of the uterus unless the contractions can be controlled. Under certain circumstances it may be desirable to permit the uterus to expel its contents prematurely, as for example when it contains a dead fetus, a monstrosity, or an hydatid mole. Under most circumstances, however, the retention of the product of conception until full term is very desirable even when certain complications of pregnancy are present. At least the temporary inhibition of uterine contractions is imperative when the fetus is just on the borderline of viability. Our experience with

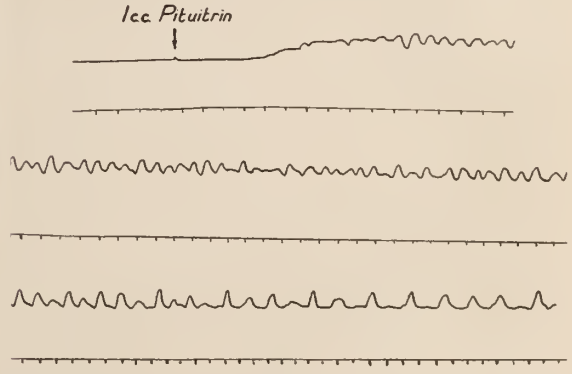


Fig. 2. Effect of icc. of pituitrin on uterine contractions.

the use of progestin preparations in such cases leads us to believe that they are extremely valuable even though the numbers treated thus far are not great enough to be entirely convincing.

In order to appreciate the fundamental factors which underlie the clinical phenomena apparent in some of these complicated cases, it is necessary to review the physiology of normal labor.

The mechanism of normal labor according to our conception is as follows:

The uterus, as all other hollow organs of the body under normal conditions, will try to expel anything that is put into its cavity. The natural

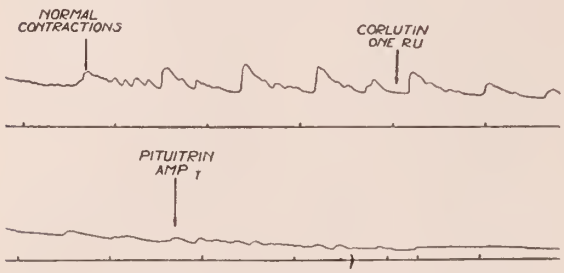


Fig. 3. The effect of progestin on uterine contractions stimulated by the metreurynter bag.

tendency for every uterus during pregnancy is to get rid of its contents. The substance in the body especially elaborated to prevent this is progesterone. In the early months of pregnancy this substance is formed in the corpus luteum of the ovary, later it is manufactured by the placenta. As pregnancy develops there occurs, due to stretching of the pelvic tissues, an irritation of the pelvic sympathetic ganglia. In response to this irritation, impulses reach the hypophysis which stimulate it to secrete physiological doses of pituitrin into the blood stream. These stimulate the uterine muscle to contract which irritates the cervix and the sympathetic ganglia and starts the cycle over again. In order to prevent this from occurring before completion of fetal development, nature has prepared an anti pituitrin in the form of progesterone. The action of this hormone on uterine contractions, both normal and pituitrin stimulated, is clearly seen in the tracings.

Figure 2, shows the effect of a one cc. injection of pituitrin stimulating uterine contractions. The contractions start about four minutes after the pituitrin is injected, are tetanic at first, and are followed by regular rhythmical contractions which persist for two hours or longer.

Figure 3, shows that the presence of the inflated bag will produce uterine contractions and that these can be stopped by the injection of one rabbit unit of a progesterone preparation, after

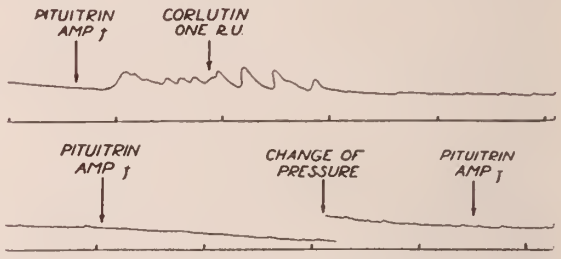


Fig. 4. The effect of progestin on uterine contractions stimulated by pituitrin.

which further injection of pituitrin causes no uterine contractions.

Figure 4, shows what happens when one cc. of pituitrin is injected initiating contractions which were promptly stopped by progesterone, after which the uterus was refractory to stimulation by pituitrin.

Figure 5, shows that after a preliminary injection of progestin the uterus fails to respond to bag or pituitrin stimulation even when sensitized by estrogenic hormones.

Figure 6, demonstrates that morphine, which is much used in the treatment of threatened

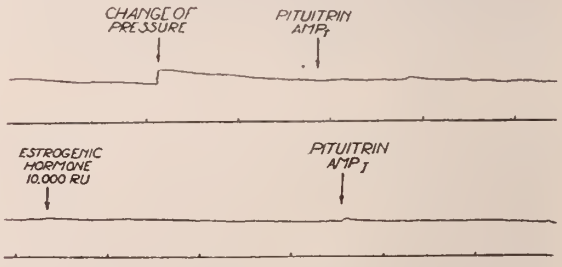


Fig. 5. Failure of uterus to respond to pitruitrin following preliminary injection of progestin.

abortion, not only does not cause sedation of uterine contractions but actually seems to stimulate them.

Figure 7, shows that the estrogenic hormone seems to sensitize the uterus so that the presence of the inflated bag leads to uterine contractions.

Because of the expense of the oily extract of the corpus luteum its continued use in women with threatened and habitual abortion is often

prohibitive. We therefore began to investigate other extracts of the corpus luteum. We were told that progesterone was only soluble in oily solutions. However, on testing out a water soluble extract of corpus luteum made by Hynson, Westcott and Dunning, we were able to demonstrate that there was an appreciable amount of progesterone in the solution.

Figures 8 and 9, show that in five-cc. doses uterine contractions would definitely decrease in

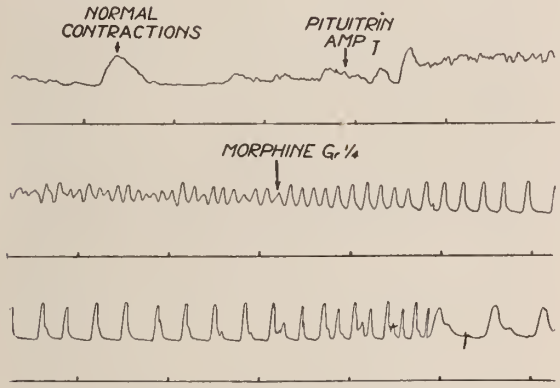


Fig. 6. The stimulating effect of morphine on uterine contractions initiated by pituitrin.

frequency and strength while ten cc. inhibited uterine action entirely.

Figure 10, is an extremely interesting tracing showing the presence of the hormone progesterone in the circulating blood coming from the ovary containing the corpus luteum. The blood was withdrawn from the ovarian vein of a pa-

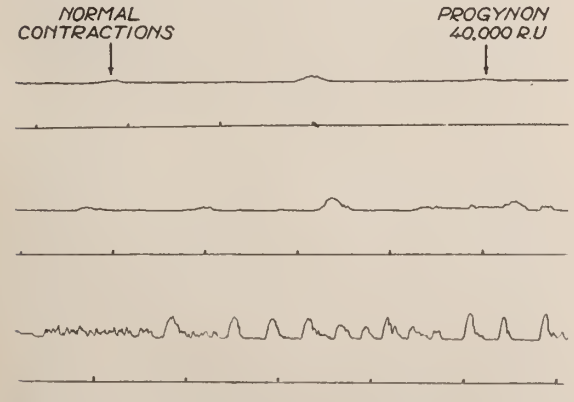


Fig. 7. The sensitizing action of estrogenic hormone on uterine contractions.

tient being operated upon in my clinic by my colleagues, Dr. William H. Browne and Dr. George Rezek. The blood was allowed to coagulate and the serum thus obtained was injected after contractions had been established by pituitrin, using the same technique and apparatus that had been used for the previous experiments. It will be seen that as little as two cc. had a distinct inhibiting action and that four and six additional cc. entirely inhibited the stimulative effect of one cc. of pituitrin.

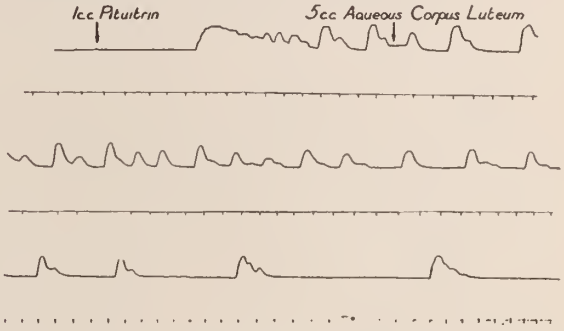


Fig. 8. The effect of corpus luteum extract on uterine contractions initiated by pituitrin.

My colleagues, Doctors Julius E. Lackner and Leon Krohn worked with me in a clinical study of the treatment of threatened and habitual abortion. A table showing the results of this management previously published is included, Figure 11. Since this was compiled many additional cases have been added and the results are practically a duplication of our former observations.

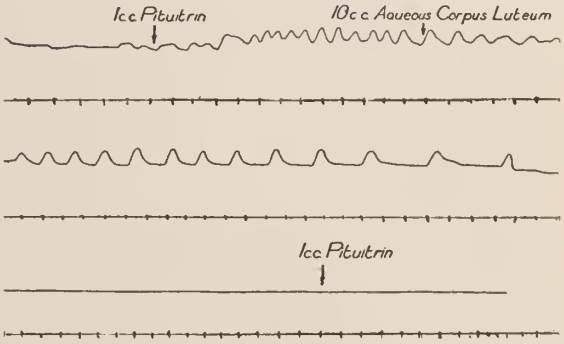


Fig. 9. The effect of 10 cc. of corpus luteum extract on uterine contractions stimulated by pituitrin.

What we have learned from further experience in the abortion cases is that it is important to determine whether or not the product of conception is still alive at the time the patient comes under observation. To this end we have used the "dead fetus reaction" worked out in my clinic by Dr. George H. Rezek. I had assigned Dr. Rezek the duty of making the injections and reading the reactions in the ovary of the test animals in all cases in which it was thought

necessary to do a Friedman test for the diagnosis of pregnancy. One day he brought me a pair of ovaries saying that the reaction was neither strongly positive nor negative. He also made the statement that the fetus in that case was dead. I suggested that he get other cases with a known dead fetus and run the test in them. This was done and we were greatly surprised to find that in about 95 per cent. of the

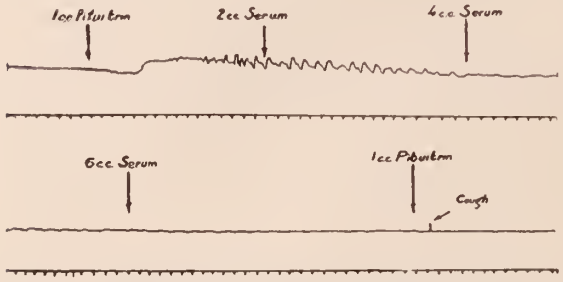


Fig. 10. The effect of blood serum from the vein of an ovary containing corpus luteum on uterine contractions produced by pituitrin.

cases tested the reaction was sufficiently clear cut to make a diagnosis of death of the fetus extremely probable. Obviously progesterone preparations are only valuable in the treatment of those cases in which the fetus is alive. Complete, incomplete, and missed abortions are contraindications for its use.

Premature detachment of the placenta can be defined as a "glorified abortion." The cause of the detachment seems to be uterine contractions which are stimulated by the extravasation of blood between the placenta and the uterine wall. This is almost always a limited process at first and only becomes extensive after the uterine contractions have caused extensive separation. Since this is so it would seem logical to apply progesterone by hypodermic injection in large doses as soon as the diagnosis of partial premature separation can be made from the early signs and symptoms. This we have been able to do in five cases with excellent results. The accident is especially apt to occur at about that period of gestation when the baby is on the border line of viability. Under these conditions if the uterus is emptied the fetal mortality rate will be very high. By keeping the uterus from contracting and thus preventing further placenta separation, the fetus may gain another three or four weeks of intra-uterine life which will practically insure its survival if then delivered by cesarean section. Of course if the baby is already close to term at the time of the first symptoms of premature separation, it should be delivered at once by cesarean section if there is any evidence of fetal distress as evidenced by abnormalities of the heart tones.

Placenta previa should be considered a premature detachment of the placenta which happens to be attached to the lower uterine segment.

The difference between it and the other types of premature detachment lies in the fact that the detachment is due to a thinning and stretching of the lower uterine segment, usually after the seventh month of pregnancy. Such a condition inevitably leads to separation of the placenta from the lower uterine segment and a hemorrhage of varying degrees of severity depending on the amount of separation. The mechanism of formation of the lower uterine segment depends in part at least, on the intermittent contractions of Braxton Hicks. In a given case presenting hemorrhage from placenta previa in which a nonviable or very premature baby is present in utero, progestin should be given to decrease uterine contractions and thus inhibit further formation of the lower uterine segment and further separation and bleeding until the fetus has attained viability; even in cases in which the bleeding occurs later in pregnancy it can be used to quiet uterine contractions pending arrangements being made for other forms of treatment.

Premature rupture of the membranes is one of the serious complications of pregnancy, and especially so when it occurs before or just at the seventh lunar month, because of the danger of premature expulsion of the baby. In these cases we have used progestin preparations to prevent the onset of uterine contractions and have been successful in accomplishing this for varying periods of time from a few days up to a month. This has resulted in improving the chances of the baby to survive by reducing its prematurity. In these cases there is always a danger that the amniotic fluid will become infected from upward invasion of the bacterial flora of the vagina. When clinical evidence shows that this is taking place, the progestin injections are stopped and the uterus is allowed to empty itself, irrespective of the condition of the fetus.

The onset of premature labor has been controlled by the injection of progestin preparations. However, when labor has actually started, the

effect of progestin on the frequency and strength of uterine contractions has been negligible.

TABLE I

Group	No.	Success	Failure
Threatened Abortions only. .	11	10 (91%)	1 (9%)
Habitual Abortions only.....	13	10 (77%)	3 (23%)
Threatened and Habitual Abortions	17	14 (79%)	3 (21%)
Total Cases treated with Progestin	41	34 (83%)	7 (17%)

Fig. 11. Clinical results in the treatment of habitual and threatened abortion by progestin prepartions.

Discussion: It is seen therefore, that in progestin preparations we have apparently a physiological agent which can be used in the management of obstetrical cases which are complicated by the fact that the uterus is abnormally irritable. As a result, hormone imbalance follows or some accidental complication of gestation. It is apparently ineffectual in the doses we had used in those cases in which the fetus is dead and in those patients who are in actual labor.

The argument has been advanced that by treating women who are aborting, and preventing the expulsion of the fetus, that in a rather large percentage of cases the fetus will show developmental abnormalities. According to our experience there is no evidenec that this is the case since there was no greater incidence of deformity in our treated cases that went on to maturity than in others not so treated.

We have assayed a number of extracts prepared from the corpus luteum which are on the market and find that there is a considerable difference in potency. In our hands the oily solution of progestin prepared by Upjohn and Company and the watery extract of corpus luteum prepared by Hynson, Westcott and Dunning have given the best results.

The prophylactic use of these preparations is also recommended. For example, a pregnant woman who is forced to take a long automobile trip, a pregnant woman who receives a severe mental shock, such as news of the death of a near relative, should be given prophylactically a few injections of progestin. It is well known that high temperatures tend to produce abortion and premature labor, therefore, in various diseases associated with febrile reactions, prophylactic use of progestin would seem to be indicated. In such cases the additional advantage in preventing abortion in an already infected patient with the attendant danger of subsequent puerperal sepsis is important.

As an index of the efficacy of this preparation, we may say that in the last year we have treated successfully, nine partial premature detachment of the placenta; one placenta previa; ten premature labors; one premature rupture of the membranes and two habitual abortions.

During the same time we treated unsuccessfully, one habitual abortion; one threatened abortion; two premature rupture of the membranes, and one premature detachment of the placenta.

With the evidence presented, both from the clinical and laboratory side, it is obvious that the use of progestin is of extreme importance in the management of habitual and threatened abortion, premature detachment of the placenta, placenta previa, premature rupture of the membranes and under any circumstance which might lead to undue stimulation of the pregnant uterus. The importance of its prophylactic use is stressed and its impotence in the presence of a dead fetus or after the onset of labor is pointed out. The importance of selecting physiologically active preparations is urged.

Note: In this article the preparations used to produce the inhibitory effect on uterine contractions were prepared by several organizations using different methods of extraction of the active principle of corpus luteum (progesterone). The water soluble extractive has not been shown to be chemically identical with progesterone preparations, as described in The Journal of the American Medical Association, May 23rd, 1936, Vol. 106, pp. 1808-1809, but it produces under the conditions of these experiments, identical effects in inhibiting uterine contractions.

TREATMENT OF ARTICULAR DISORDERS WITH PROGESTERONE

"Touw and Kuipers treated three women who had articular disorders with injections of progesterone. The authors were induced to resort to this treatment by the observation that as soon as the patients became pregnant the articular disorders disappeared, to return again a few weeks after confinement. In the first patient it appeared that the complaints were caused by disturbances in the growth of the epiphyses of the hip joints with resulting arthrosis deformans, whereas the other two patients had chronic articular rheumatism (primary chronic polyarthritis). The case histories indicate that the progesterone was administered by daily intramuscular injections of 2 cc. (10 units) during the second phase of the intermenstrual period. The results obtained with this treatment were favorable, but its mode of action is not understood as yet. The authors are as yet unable to estimate the duration of the improvement, but in one of the patients it has so far per-

sisted for six months and in another for four months. In case of recurrence, the authors intend to apply the same treatment. However, they emphasize that the progesterone therapy is not necessarily indicated in all articular disturbances. They only wish to point out that there are patients in whom the anamnesis justifies treatment with progesterone."

HEALTHIEST PEOPLE IN THE WORLD

"As a people this includes Canada—we are, beyond all doubt, the healthiest in the world. The reason is, perhaps, that more than most, we have emerged from medical superstition. Still there is a lot of nonesense uttered on this point. One recently read a booklet written by a socalled 'liberal' who used the perfectly legitimate fact that 50 per cent of our people the year before had not received any medical attention. He used that fact to imply that 50 per cent of our people were denied or unable to get such attention. Apparently it did not occur to him that at least half our population might be so healthy as not to need medical attention. Any doctor will confirm, that part of the 50 per cent who do demand medical attention do not need it—they are neurotics, or persons frightened on account of others, or young parents—God bless them!—who want to be 'sure' about the baby. As a matter of statistics, 47 per cent of our people never have required medical attention because of diseases."—J. J. Cameron.

FREEDOM AND MEDICINE

"We should be mindful of the fact that the greatest advancement in the science of medicine, that of the past century, has taken place in the period characterized by the greatest human liberty and freedom from political restraint. In no other field has the necessity for free individual initiative been more clearly demonstrated than in the science of medicine. It is of the utmost importance that everything be done to preserve those natural incentives to individual accomplishment. Compulsion and the lack of natural rewards for individual improvement, such as must prevail in any political system, cannot fail to have a deleterious effect upon all individual effort. Socialized medicine would of necessity and because of the manner in which it must be operated, tend to freeze the present state of medical knowledge and check advancement."—(Hon. F. C. Smith, of Ohio.)

STAMMERERS

The incidence of stammering among Liverpool elementary school children examined at routine inspections amounted to 0.52 per cent in 1938, 208 stammerers being discovered by the School Medical Officers. In his latest annual report as Medical Officer of Health, Dr. W. M. Frazer, O. B. E., states that before such children are admitted to the special classes for treatment they are given a general examination, and the parents are advised regarding general health and hygiene and of any physical defects which may be contributory factors in the causation of the stammer.

It is explained to both children and parents that improvement is invariably slow, and that the rate of progress, under treatment, is dependent upon the personal efforts and perseverance of the children, and the parents are asked for their cooperation.—World Education, November, 1939, p. 491.

NAZI INSURANCE HIGH

Professor Winslow of Yale University is authority for the statement, that for sickness insurance alone the German laborer must set aside something more than eight per cent of his income (8.5% to be exact) and that the employer for the same purpose adds five per cent more. Statistics in the United States claim that the average cost of medical care to the citizenry is something like three per cent of the income. Undoubtedly Germany's other ten and five-tenths per cent (10.5) is used for paying salaries and buying red tape for the tremendous political bureaucracy needed to handle the German social insurance system.

MEDICAL TREATMENT NOT SCHOOL'S RESPONSIBILITY

"The multiplication of clinics for medical and dental treatment in certain schools is not evidence of progress in public health," writes Dr. Leigh F. Robinson, President of the Florida Medical Association. "It is rather a concession to expediency, and an acknowledgment that constructive community cooperation has not been developed."

Believing, however, that the schools have sufficient to do without indulging in medical treatment of school children, he urges that school officials provide, first, proper wholesome surroundings which include modern building and sanitary standards; second, necessary facilities for prevention, spread, and immunization against communicable diseases; third, a well balanced curriculum with thoughts against overloading, and with proper balance between mental and physical activities: fourth, adequate instruction in healthy living; and fifth, against the waste and misuse of public funds collected for educational purposes.—Leigh F. Robinson, M. D., Florida Health Notes (September, 1939).

Marriages

Allen H. Hoover to Miss Margaret B. Dailey, both of Chicago, Oct. 21, 1939.

Robert Gaddis Price, Bloomington, Ill., to Miss Catherine Justine Sinclaire, of Brooklyn, Nov. 25, 1939.

Irving Puntenney to Miss Ethel Krug, both of Chicago, Oct. 17, 1939.

Kent L. Wattleworth, Newton, Ill., to Miss Jean Hine, of Indianapolis, in Frankfort, Ind., Aug. 17, 1939.

William H. Wright to Miss V. Ruth Emmerson, both of Chicago, in Bellwood, Ill., Aug. 4, 1939.

Society Proceedings

Coming Meetings

February 13—Kankakee Cunty Medical Society—Noon, McBroom's Cafe, Kankakee.

February 13—Knox County Medical Society—6:30 P. M., Galesburg Club, Galesburg. Dr. F. E. Schmidt, "Pneumonia" two motion pictures on pneumonia and allergy.

February 13—Bond County Medical Society—7:00 P. M., Thomas Hotel, Greenville. Dr. Richard Paddock, "Pernicious Vomiting and Toxemias of Pregnancy."

February 13—Effingham County Medical Society—6:30 P. M., Benwood Hotel, Effingham. Dr. Robert S. McCaughey, "Common Colds and Upper Respiratory Infections."

February 13—Lake County Medical Society—Evening, Abbott Laboratories, North Chicago. Dr. L. F. Weber, "Common Skin Diseases."

February 14—McDonough County Medical Society—6:00 P. M., LaMoine Hotel, Macomb. Dr. Henry Irish, "Useful Drugs in Infancy."

February 15—Henry County Medical Society—6:00 P. M., Kewanee. Dr. Italo F. Volini, "Pneumonia"; Dr. Frederick Rehm Schmidt, "Common Skin Diseases."

February 16—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Eugene F. Traut, "Migraine, Its Treatment."

February 20—Fayette County Medical Society—6:30 P. M., Evans Hotel, Vandalia. Dr. M. P. Borovsky, "Diseases of the Newborn."

February 22—Montgomery County Medical Society—7:00 P. M., Elks Club, Litchfield. Dr. James T. Case, "Symptoms and Differential Diagnosis of Carcinoma of the Colon."

February 28—Christian County Medical Society—6:30 P. M., Taylorville Country Club, Taylorville. Dr. Ralph Reis, "The Difficulties of Obstetric Diagnosis"; Dr. Harry Leichenger, "The Prophylaxis of Contagious Diseases."

March 1—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Carlo S. Scuderi, "Newer Ideas of Colles Fractures."

March 4—Menard-Mason County Medical Societies—7:30 P. M., Masonic Hall, Mason City. Dr. H. C. Hesseltine, "The Status of Caesarian Section"; Dr. M. L. Blatt, "Upper Respiratory Infections and Their Sequelae."

March 5—Vermilion County Medical Society—6:00 P. M., Danville, Hotel Wolford. Dr. Clark W. Finnerud, "Diseases of the Skin."

March 6—Schmitt Memorial Hospital, Beardstown—6:15 P. M. Dinner. Dr. A. E. Kanter, "Prevention of Abortion with a Discussion of Endocrine Therapy."

March 8—Will-Grundy County Medical Society—12:00, Louis Joliet Hotel, Joliet. Dr. Charles Newberger, "Reducing the Hazards of Childbirth."

March 8—Jersey-Greene County Medical Societies—6:30 P. M., Baptist Church, Carrollton. Dr. H. W. Elghammer, "Rheumatic Heart Disease in Children."

March 12—Bond County Medical Society—7:00 P. M., Dinner, Thomas Hotel, Greeneville. Dr. Craig Butler, "The Premature Infant"; Dr. W. C. Scrivener, "Management of Obstetric Hemorrhages."

POST GRADUATE CLINICAL CONFERENCE DU QUOIN

March 7, 1940

The third postgraduate clinical conference sponsored by the Illinois State Medical Society will be held at the Elks Club, DuQuoin on Thursday, March 7.

The program will start promptly at 1:00 P. M. and will continue as follows:

1:00-1:40 P. M.—Urology—Dr. Andy Hall, Jr., St. Louis, Mo.
1:40-2:20 P. M.—Dermatology—Dr. C. A. Lane, St. Louis, Mo.
2:20-3:00 P. M.—Pediatrics—Dr. J. C. Jaudon, St. Louis, Mo.
3:00-4:00 P. M.—Heart Clinic—with four patients—Dr. R. S. Berghoff, Chicago.
4:00-4:40 P. M.—Obstetrics—Dr. Frederick H. Falls, Chicago.
4:40-5:20 P. M.—Hand Infections—Dr. Dean Sauer, St. Louis, Mo.
5:20-6:00 P. M.—Fractures—Dr. Philip H. Kreuscher, Chicago.
6:30-7:30 P. M.—Dinner.
7:30-8:30 P. M.—Oration in Surgery—Dr. C. W. Mayo, Rochester, Minn.
8:30-9:00 P. M.—Endocrinology—Dr. James H. Hutton, Chicago.
9:00-9:30 P. M.—Medical Economics—Dr. E. S. Hamilton, Kankakee.

Doctors of Illinois are cordially invited to attend this meeting. No registration fee will be charged. Those in charge of the arrangements are Dr. James S. Templeton, Dr. Andy Hall and Doctor H. G. Horstman.

Personals

Drs. Joseph Greengard and Edward L. Cornell presented a program on "Pneumoia in Childhood" and "Management of Prolonged Labor" before the Menard-Mason County Medical Societies at Mason City, Illinois, January 9.

Drs. Franklin J. Corper and O. S. Krebs of St. Louis presented a program on "Pneumonia in Children" and "Management of the Puerperium and Its Complications" before the Bond County Medical Society at Greenville, Illinois, on January 9.

Dr. Henry Buxbaum addressed the McLean

County Medical Society at Bloomington on January 9.

Drs. Joseph Baer and H. G. Poncher addressed the Jersey-Greene County Medical Societies on January 12 at Carrollton on "The Endocrines in Obstetrics and Gynecology" and "Feeding the Baby."

Dr. William J. Dieckman gave a paper on "Eclampsia" before the Saline County Medical Society on January 25.

Drs. Julius Hess and Henry Buxbaum presented a program on "The Premature Infant" and "Toxemias of Pregnancy" before the doctors of the Christian County Medical Society on January 24.

Dr. James J. Callahan was scheduled to give a paper on "Fractures About the Elbow before the Will-Grundy County Medical Society January 23.

Dr. Frederick H. Falls was invited to address a lay meeting at Mattoon, sponsored by the Coles-Cumberland County Medical Society January 26 on "Maternal Welfare."

Dr. Theodore T. Stone addressed the Bureau County Medical Society on January 9 at Princeton, on "Newer Methods of Treatment of Nervous and Mental Disorders."

Dr. Alonzo H. Hall, Niantic, recently was presented with a gold emblem by the state medical society, signifying the completion of fifty years in the practice of medicine.

Dr. Alfred S. Ash, formerly of Chicago, has been placed in charge of the Soldiers' and Sailors' Home and Hospital, Quincy, succeeding the late Dr. Chauncey E. Ehle.

Dr. Kellogg Speed, Chicago, discussed "Fractures About the Elbow Joint" before the Madison County Medical Society, Edwardsville, January 5.

Dr. Walter H. Baer, superintendent of the Peoria State Hospital, has been appointed acting superintendent at the Manteno State Hospital, Manteno, succeeding Dr. Ralph T. Hinton, it is reported.

The Chicago Council of Medical Women was addressed January 10, among others, by Drs. Victoire D. Lespinasse on "Urinary Tract Changes in Pregnancy."

Dr. Sigismund S. Goldwater, commissioner, department of hospitals of New York City, addressed the fourth anniversary dinner of the Chicago Hospital Council at the Blackstone Hotel January 15. His subject was "Do American Cities Need Both Voluntary and Tax-Supported Hospitals?"

The Chicago Society of Allergy was addressed January 15 by Drs. French K. Hansel, St. Louis, and Milton B. Cohen, Cleveland, on "Allergy of the Nose and Paranasal Sinuses from the Standpoint of the Otolaryngologist and the Allergist" and "Metabolic Aspects of Allergy" respectively.

A symposium on epidemic tracheobronchitis was presented by Drs. Chevalier L. Jackson, Philadelphia, and Joseph Brennemann, Chicago, before the Peoria City Medical Society January 4. Dr. Willard Van Hazel, Chicago, addressed the society January 16 on "Diagnosis and Treatment of Empyema."

Dr. Vilray P. Blair, professor of clinical surgery, Washington University School of Medicine, St. Louis, addressed the Chicago Medical Society January 17 at the Chicago Woman's Club. His subject was "Treatment of Facial Deformities Due to Trauma." A symposium on industrial medicine nad traumatic surgery constitutes the clinical session at St. Luke's Hospital during the day.

Dr. Hugh R. Butt, Rochester, Minn., addressed the North Shore Branch of the Chicago Medical Society January 2 on "Vitamins, Recent Advances and Their Clinical Application." Dr. Marion A. Blankenhorn, Cincinnati, discussed "The Serum and Chemotherapy of Lobar Pneumonia" before the North Side Branch January 4.

The past presidents of the Peoria City Medical Society were entertained at the second annual dinner given in their honor at the Hotel Pere Marquette November 21. There are about twenty-five past presidents now living. Dr. Irving S. Cutter, dean, Northwestern University Medical School, Chicago, spoke on "Some Literary Physicians."

Dr. Charles E. Soule, Beardstown, was recently guest of honor at a banquet given by the Cass County Medical Society in recognition of his fifty years in the practice of medicine. The

Illinois State Medical Society presented him with a certificate and medal.

Dr. Joseph T. Maher, formerly of Koch, Mo., has been appointed medical director of the Madison County Tuberculosis Sanitarium, Edwardsville, following the resignation of Dr. Oscar C. Heyer, who held the position for more than four years.

Drs. Walter D. Stevenson, Earl L. Caddick and Harry O. Collins were honored by St. Mary's Hospital, Quincy, with a dinner November 7 to observe their completion of twenty-five years on the staff of the hospital.

Members of the Illinois State Medical Society and citizens of Scott County honored Drs. George W. Bowman, Alsey, and George M. Straight, Winchester, at a banquet November 22 held to celebrate their many years of practice. Dr. Bowman has been practicing in Scott County for fifty-nine years and Dr. Straight fifty-eight.

At a meeting of the Chicago Pediatric Society January 16 Dr. Katsuji Kato spoke on "The Prothrombin in the Blood of Newly Born Mature and Immature Infants as Determined by the Microprothrombin Test" and Dr. Eugene T. McEnery and Mrs. Frances Perlowski Gaines on "Tongue-Tie in Infants and Children."

At a meeting of the Chicago Laryngological and Otological Society January 8 the speakers were Drs. John R. Lindsay on "Laryngocele"; Gordon H. Scott, "Caries of the Vertebrae in Retropharyngeal Space Infection"; Henry B. Perlman, "The Eustachian Tube: Normal Physiology; Abnormal Patency," and Paul C. Bucy and William Tracy Haverfield, "Cranial and Intraeranial Complications of Frontal Sinusitis."

Dr. Arthur F. Abt addressed the Whiteside County Medical Society at Sterling on January 11, subject "Pros and Cons for Sulfanilamide Therapy in Infants and Children."

Dr. Leon Unger was invited to give a paper on "Newer Phases of Migraine" before the Macon County Medical Society at Decatur on January 30.

Drs. Ford Hick and Howard A. Lindberg presented a pneumonia program before the Will-Grundy County Medical Society at noon, February 2.

Dr. A. J. Kobak was invited to give a paper on "Management of Prolonged Labor" before the Madison County Medical Society on February 2.

Drs. Ralph Reis and H. J. Noyes were invited to present the January 25th program before the Logan County Medical Society. Their subjects were "Management of the Puerperium and Its Complications" and "The Present Status of Dental Caries from the Standpoint of Knowledge of Etiology, Treatment and Dental Caries as an Index of Nutritional Adjustment."

Dr. Leon Unger addressed the Union County Medical Society at Anna, Illinois, on January 11, 1940. The subject was "The Newer Phases of Migraine."

At the December meeting of the American Association for the Advancement of Science, Dr. Edmund Jacobson announced a new instrument —The Integrating Neurovoltmeter—to afford the direct measurement of nervous or of muscular states in various diseases, without anesthetic.

News Notes

—The McDonough County Medical Society last Tuesday presented to Dr. Elizabeth R. Miner, of Macomb, a check for twenty-five dollars as a token of their appreciation of her work as secretary-treasurer for the Society for the last fifteen yeas. She was elected for life to this office but resigned recently as she and her husband decided to spend their winters in Florida. Dr. Miner has been state delegate for twenty years, and has held every office in the gift of the County Society, as well as the office of second vice-president of the Illinois State Medical Society.

—The construction of a tuberculosis hospital at the main institution of the Lincoln State School and Colony will soon be started, according to *Welfare*. The hospital will provide beds for thirty-three male and thirty-three female patients in two large wards and four private rooms.

—The University of Chicago will receive about $2,000,000 under the will of Orson C. Wells, retired Chicago broker, who died December 10. Mr. Wells directed that the gift be used to found a permanent fund for medical education and research in connection with the Billings Clinic, a part of the Albert Merritt Billings Hospital, at the institution. The university will use the gift to meet expenses in its medical work, it was

stated. The will also provides for a $50,000 bequest to the Presbyterian Hospital for use in urologic research.

—Dedicatory exercises of the new quarters for the tumor clinic of Michael Reese Hospital were held January 25 in the Rothschild Auditorium, Nurses' Residence, with Mr. Harry N. Gottlieb, president, board of directors, presiding. Dr. Erich M. Uhlmann, director of the clinic, will give the introductory address. Arthur H. Compton, Ph.D., professor of physics, University of Chicago, will discuss "Possible Benefits of New Types of Radiation" and Carl Voegtlin, Ph.D., chief, National Cancer Institute, Bethesda, Md., "Problems in Fundamental Cancer Research." The new tumor clinic has adequate space for the examination, diagnosis and treatment of patients suffering from neoplastic diseases. There is also a laboratory for biophysical research. Specially protected rooms have been constructed for the housing of a 4 Gm. radium bomb for deep radium therapy, in addition to which 0.5 Gm. of radium in smaller units will be available for superficial and interstitial application. Two new x-ray machines, designed to be operated by a single transformer with the unusual feature of measuring directly the exact dosage on the patient, have been provided for this department. These new facilities have been made possible by the families of Max Straus and David Silberman.

—The second annual Midwestern Forum on Allergy will be held January 13-14 at the Palmer House. Among the speakers will be the following:

O. C. Durham, North Chicago, Results of Atmospheric Research During 1938-1939.

Dr. Theron G. Randolph, Milwaukee. Studies in Mold Allergy.

Dr. Frederick W. Wittich, Minneapolis, The Nature of Various Mill Dust Allergens.

Drs. John Warrick Thomas and John R. Forsythe, Cleveland. Allergic Purpura.

Dr. Clarence Bernstein, Chicago, Comments on Differential Diagnosis and Management of Cardiac and Bronchial Asthma.

Dr. Mary E. H. Loveless, New York, Changes in the Serum and Skin of the Allergic Patient During Specific Therapy.

Dr. Ethan Allan Brown, Boston, New Method of Medication for Allergic Complaints.

Dr. Paul R. Cannon, Chicago, The Mechanism of the Arthus Reaction and Its Relationship to Allergic Inflammation.

Dr. Richard H. Young and Mr. Robert P. Gilbert, Use of Aminophyllin to Control Bronchial Spasm Induced by Histamine.

Dr. Michael Zeller, Chicago, Passive Transfer Studies in Neurologic Conditions.

—A course on the "Technic of Gonioscopy and Interpretation of Gonioscopic Findings" will be given at the Illinois Eye and Ear Infirmary February 12-17 from 11 a. m. to 12:30 p. m. daily. Physicians with at least two years' experience or training in ophthalmology are eligible. The course will be limited to four persons and will consist largely of clinical work. The fee is $25 to be paid on registration. Applications should be addressed to the Dean of Education, Illinois Eye and Ear Infirmary, 904 West Adams Street.

—A total of 161,903 persons have attended the five trachoma clinics of the state during the five years of their existence. The clinics, established about 25 miles apart in Shawneetown, Jonesboro, Eldorado, Herrin and Vienna, give treatments each week to about 700 persons of all ages and in varying stages of trachoma. On August 12 there were 3,276 cases of positive trachoma under care at the five clinics, with 1,295 suspects under observation. According to *Welfare,* 191 operations were performed in the past year. Of the 331 new patients with positive trachoma received for treatment at the clinics in the year ended June 30, 1938, there were thirty-three, or 10 per cent, who had beginning trachoma; fifty-five were in the second stage, sixty-six in the third stage and 177 in the fourth stage. Many persons who came to the clinics for diagnosis did not have trachoma but suffered from other eye conditions which threatened their vision. Of these, eighty-eight were sent to the Illinois Eye and Ear Infirmary during the past year and twenty-four more are waiting until beds are available.

—A group of eleven hospitals serving three counties to the west of Chicago have united in a cooperative public relations effort. The principal activity at present is a half hour radio broadcast consisting of music, health dramatizations and the presentation of hospital facts of interest to the community. The hospitals cooperating in this are Copley, St. Joseph, Mercy and St.

Charles hospitals in Aurora; Sherman and St. Joseph hospitals in Elgin; the Elmhurst Community Hospital, Inc., in Elmhurst; the Community Hospital, Geneva; the Hinsdale Sanitarium and Hospital, Hinsdale; Silver Cross and St. Joseph's Hospitals, Joliet, and the City Hospital in St. Charles. Each week one of the hospitals acts as the host for the program, which includes a short history of the hospital and some pertinent community information. Dramatic material offered for the broadcast is furnished by the Bureau of Health Education of the American Medical Association. About two or three minutes toward the end of the program are devoted to a statement on some phase of hospital activity as it affects the community as a whole and the sick in particular, emphasizing always the work of the hospital and the physicians as a vital factor in the community, according to the announcement. These programs are being presented by radio station WMRO, Aurora, as a public service feature and the cost to the hospitals thus far has been small.

—Northwestern University will receive $1,500,000 and the University of Chicago $1,000,000 under the will of the late Mrs. Clara A. Abbott, widow of Dr. Wallace C. Abbott, founder of the Abbott Laboratories in North Chicago. The money in both instances is to be used for medical, surgical or chemical research. It was announced that the Physiological Building at the University of Chicago would be renamed Abbott Memorial Building, while Northwestern plans to give the name of Abbott Hall to the eighteen story dormitory which is being erected on the Chicago campus. The bequest to the Universityof Chicago assures an additional grant of $1,500,000 to the university.

THE INSTITUTE OF MEDICINE OF CHICAGO

Preliminary Announcement: On Friday evening, February 23, at 8:00 o'clock at the Palmer House Dr. Alan R. Moritz, professor of legal medicine at Harvard Medical School, will deliver the 16th Ludvig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago on "Medical Science and the Administration of Justice." On the same day a medicolegal symposium will be held under the auspices of the Institute's committee on medicolegal problems, Oscar T. Schultz, M. D., chairman. The morning session will be held in the amphitheater of Cook County Morgue and will be given by the scientific staff of the Cook County coroner's office. The afternoon session will be held at the University of Illinois Medical School, Albert J. Harno, dean of the College of Law of the University of Illinois, presiding. Addresses will be given by John I. Howe, Captain, Chicago Police Department, on "The Police and the Medical Profession"; I. Davidsohn, M. D., Pathologist, Mount Sinai Hospital, on "Medicolegal Application of Blood Groups"; Fred E. Inbau, Director, Chicago Police Scientific Crime Detection Laboratory, on "Legal Aspects of Blood-Grouping Tests"; and Benjamin C. Bachrach, Public Defender of Cook County, on Illinois Procedure in Criminal Cases Where It Is Claimed Before Trial That Defendant Is Insane." Following this session there will be a tour of the Chicago Police Laboratories.

Deaths

Joseph Louis Amorose, Galva, Ill.; Loyola University School of Medicine, Chicago, 1931; aged 40; was found dead, November 30, 1939, of an overdose of a sleeping compound.

Cyrus Hilary Anderson, Elgin, Ill.; Missouri Medical College, St. Louis, 1898; a Fellow A.M.A.; formerly managing officer of the East Moline (Ill.) State Hospital and the Anna (Ill.) State Hospital; on the staff of the Elgin State Hospital; aged 70; died, December 18, 1939, of coronary thrombosis.

Samuel Edwin Arnold, Decatur, Ill.; Hering Medical College, Chicago, 1900; College of Physicians and Surgeons of Chicago, 1908; member of the Illinois State Medical Society; aged 65; died, November 30, 1939, of coronary thrombosis.

Annie Esther Barron Harrison, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; aged 67; died, December 3, 1939, of coronary thrombosis.

Robert B. Blue, Chicago; Northwestern University Medical School, Chicago, 1904; a Fellow A.M.A.; assistant professor of ophthalmology at his alma mater; past president of the Chicago Ophthalmological Society; attending ophthalmologist and chief of staff, Wesley Memorial Hospital; aged 63; died, December 8, 1939, at his home in Flossmoor, Ill.

Carroll Booker, Bogota, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1884; aged 87; died, November 16, 1939, in Newton of chronic nephritis.

James S. Cater, Hoopeston, Ill.; American Medical

College, St. Louis, 1883; aged 78; died, December 7, 1939, of myocarditis.

John Algernon Cavanaugh, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1904; a Fellow A.M.A.; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons formerly on the staff of St. Luke's Hospital; aged 60; died, November 17, 1939, of metastatic carcinoma of the brain.

John Clinton Clagg, Wheeler, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; aged 83; died, December 4, 1939, of cerebral hemorrhage.

Francis Challfee Dickson, Galesburg, Ill.; Chicago Homeopathic Medical College, 1893; aged 71; died, November 19, 1939, in the St. Francis Hospital, Peoria.

Floyd Victor Efferding, Chicago; Washington University School of Medicine, St. Louis, 1924; served during the World War; aged 42; died, November 26, 1939, in the Henrotin Hospital of meningitis.

Halvor C. Hanson, Chicago; Rush Medical College, Chicago, 1903; on the staff of the Lutheran Deaconess Hospital; aged 58; died, December 10, 1939, of arteriosclerotic heart disease.

Henry William Lang, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; served during the World War; aged 62; died, December 3, 1939, of hypostatic pneumonia.

Thomas Alexander McTaggart, Pawnee, Ill.; Rush Medical College, Chicago, 1885; aged 78; died, December 11, 1939.

John A. Miller, Hamilton, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 84; died, November 16, 1939, of chronic myocarditis and arteriosclerosis.

Clyde Dale Pence, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; a Fellow, A.M.A.; for many years on the staff of the West Side Hospital; editor of the Illinois Medical Journal, 1913-1919; aged 71; died, December 1, 1939, of chronic myocarditis.

Michael Rozumski, Chicago; Bennett Medical College, Chicago, 1912; a Fellow, A.M.A.; aged 56; died, December 5, 1939, of carcinoma of the prostate.

Alexander Scaggs, Lovington, Ill.; Barnes Medical College, St. Louis, 1906; on the staff of the Decatur and Macon County Hospital, Decatur; aged 68; died, December 4, 1939, of acute pulmonary edema.

Kirk Shawgo, Quincy, Ill.; Rush Medical College, Chicago, 1903; a Fellow, A.M.A.; on the staff of the Blessing Hospital; aged 64; died, November 2, 1939, of coronary thrombosis.

Joseph Whitefield Smith, Bloomington, Ill.; Keokuk (Iowa) Medical College, 1891; a Fellow, A.M.A.; Fellow of the American College of Surgeons; aged 76; on the staff of the Brokaw Hospital, where he died, November 19, 1939, of pneumonia and heart disease.

William Marion Stearns, Chicago; Chicago Homeopathic Medical College, 1880; Fellow of the American College of Surgeons; aged 83; was killed, December 1, 1939, in Evanston, Ill., when struck by an automobile while crossing the street.

Otto P. Steiner, Chicago; Universität Basel Medizinische Fakultät, Switzerland, 1915; aged 49; died, October 4, 1939, of chronic myocarditis.

Isidor Harrsion Tumpeer, Chicago; Rush Medical College, Chicago, 1916; a Fellow, A.M.A.; formerly clinical assistant in pediatrics at the Northwestern University Medical School; senior lieutenant in the U. S. Navy during the World War; member of the American Academy of Pediatrics; president-elect of the Chicago Society of Allergy; aged 46; chief of staff of the pediatric department and head of the children's allergy department at the Michael Reese Hospital, where he died, November 29, 1939, of hypertension and heart disease.

Henry P. Wadsworth, Chicago; Rush Medical College, Chicago, 1889; also a dentist; served during the World War; aged 73; died, November 20, 1939, in Geneva, Ill., of poison, self administered.

Frank S. Whitman, Belvidere, Ill.; Hahnemann Medical College and Hospital, Chicago, 1872; member of the Illinois State Medical Society; formerly mayor and bank president; at one time managing officer of the Elgin (Ill.) State Hospital; aged 90; died, December 10, 1939.

Edwin Lincoln Winslow, Danville, Ill.; University of Wooster Medical Department, Cleveland, 1892; served during the World War; aged 74; died, November 10, 1939, in a local hospital of heart disease.

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CAPITALISM: You sell one cow and buy a bull.—*Exchange.*

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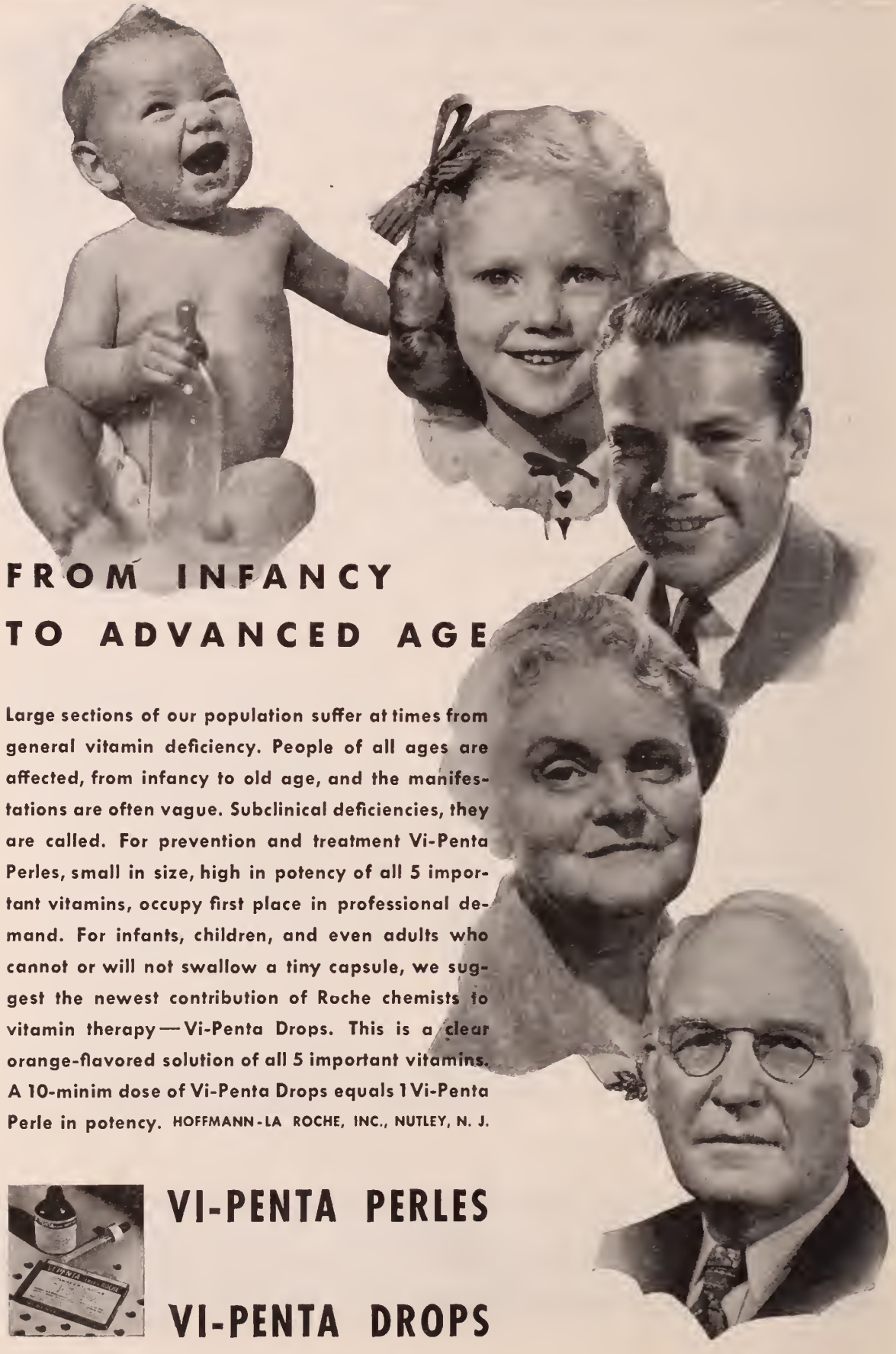
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Hospital expansion is recommended where need exists. The wise suggestion is made that the so-called private hospitals be subsidized for the care of the needy rather than that new hospitals be built. It has been shown that private hospitals throughout the country are only 60 to 70 per cent. occupied and many are having financial difficulties.

The principle has been announced that medical care of the indigent is a local problem and should be handled by local government from tax funds and with the cooperation of the local medical profession. Doubtless some communities and states may require federal assistance in the form of financial and technical aid, but no general federal subsidy is advocated.

Medicine and public health outrank education among the objects toward which American foundations now give an annual total of $38,500,000, a survey based on reports from 243 leading foundations reveals. During 1937, latest year for which figures are available, purposes relating to medicine and public health benefited to the extent of $13,495,898, while education, in second place, received $9,170,318.

The treatment of pulmonary tuberculosis demands little knowledge of drugs but much about the immediate and prolonged education of patients. Brown, Lawrason, Tuberculosis Theses.

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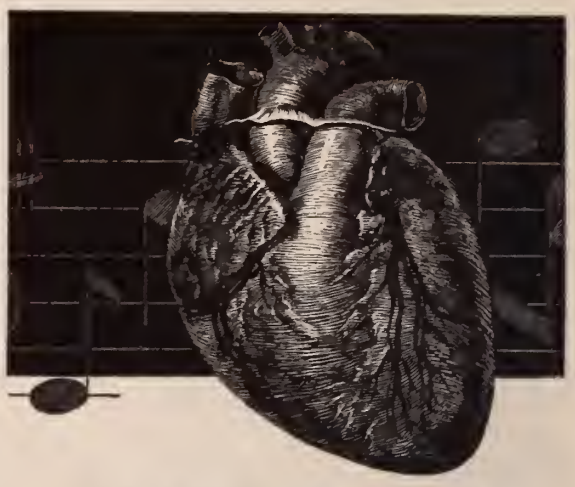
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Book Reviews

Bothman's Fundus Atlas. By Louis Bothman, M. D. Chicago. Year Book Publishers. Price $17.00. Express prepaid.

The only collection of original standard-size (3 x 6 inches) stereoscopic fundus photographs ever published, "Bothman's Fundus Atlas" is a boon to all eye specialists, neurologists, internists, gynecologists, surgeons and others who either treat the eye or appreciate its significant role in diagnosis. This new atlas pictures a wide variety of fundus conditions with an amazing clarity that has never before been approached. Dr. Bothman has selected 50 photographs to illustrate important and interesting congenital anomalies and fundus diseases, and, as many photographs show more than a single condition, the scope of the presentation is even broader than the number of pictures suggests.

All eye specialists will find "Bothman's Fundus Atlas" an invaluable aid in their work because it enables them to compare clinically proved disease conditions point by point with the cases they have under observation. Teachers. With these photographs in the hands of instructor and class members, a "clinic" may be conducted with complete freedom from the time limitation which is inevitable when a patient is under observation. Neurologists, Internists, Gynecologists, Surgeons and others will use the Atlas advantageously.

50 original stereoscopic photographs of congenital anomalies and important fundus diseases—Mounted on stout 7 x 9 inch cards bearing complete diagnostic criteria of the conditions pictured—Enclosed in a cloth covered, gold stamped case. The first fundus atlas containing only standard-size (3 x 6 inches) stereoscopic photographs fundus atlas ever offered.

The Patient's Dilemma. By Hugh Cabot, M. D. New York. Reynal & Hitchcock, 1940. Price $2.50.

Manual of Fractures, Dislocations and Epiphyseal Separations. By Harry C. W. S. de Brun, M. D. Chicago. Year Book Publishers. 1940. Price $3.00 Postpaid.

There are 150 illustrations—76 original drawings showing details of fracture diagnosis, incisions, and application of reduction principles—photographs of special types of apparatus necessary in fracture treatment, 13 full-page plates of traction methods.

Modern causes of fractures and dislocations, and development of more exact operative and manipulative technics, as well as retention methods, call for a resummation to keep the general surgical practitioner, the traumatic (traffic and general accident) surgeon, the industrial and insurance surgeon, and the specialist in bone surgery abreast of conditions which are assuming greater and greater importance in daily practice. In this ultra-practical manual, which simplifies and clarifies the entire field in concise style, every man called upon to handle fracture cases will find invaluable guides which make the difference between poor results and proper reduction with complete restoration of function.

EXERCISE, AN AMERICAN FETISH

Many, when younger, exercised vigorously and participated in competitive games; but they try to keep up such activity as they grow older and often do themselves injury. The temptation to keep on is great. Most men and women cling tenaciously to the idea that they are exceptions to the normal aging process. It is a sad sight to see older men or women wending their way in from tennis courts or golf links, weary of foot, drawn in expression, their faces flushed or ashen, foolishly proud to be able to declare that at 60, let us say, their activities are unabated. Throughout our land such a picture greets the eye almost daily at country clubs and on golf courses. These people lack either the sense or the courage to admit that they are growing older and that former activity is becoming increasingly fatiguing. They persuade themselves that such exercise is necessary for their well being. In fact, a progressive decrease in bodily exertion is what they need.

Most harmful of all is periodic, irregular, vigorous exercise. Most pernicious is the habit, so common in America, of the week-end or all-day golf game or other exercise on the brief vacation with the days filled with incessant activity, often when the individual ordinarily leads a life nearly devoid of physical exertion. All too often people collapse or die as the result of unwonted exertion or precipitate an attack of serious heart disturbance, which then necessitates weeks of enforced rest.

Present tendencies to make of exercise a fetish in all probability contribute much to the premature breakdown in so many Americans. Various forms of heart failure cause more deaths in persons past 50 than any other cause. This makes it highly important to avoid the strain on the circulatory system that results from excesses of exercise. With advancing years wisely moderate bodily exertion—Henry A. Christian, Hygeia, November, 1939.

FROM A CLERGYMAN

Whether physicians appreciate it or not, state medical societies and the American Medical Association represent distinguished institutions in the public mind. Those of the public who have been rather keen observants in the past look to these institutions to speak the voice of medicine in the true interest of the public health, when questions of major concern in the field of health arise.

I am just wondering whether the public will be confused in future thinking by hearing from four or five voices. It has happened in labor. I hope that it does not happen in medicine.

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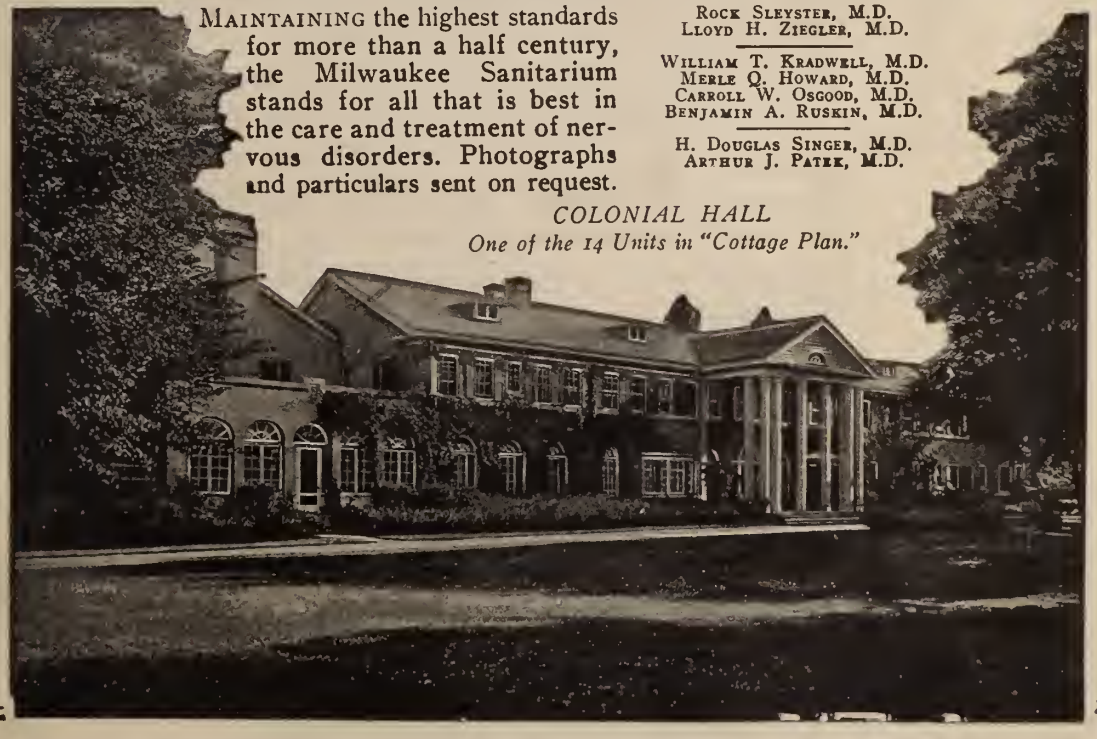
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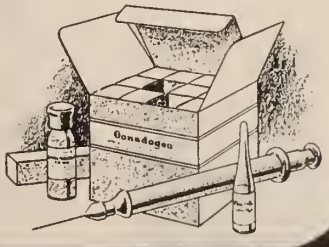
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METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

VI. Measurement of the P-P Factor (Nicotinic Acid)

● Early investigations by the U. S. Public Health Service demonstrated that pellagra may be prevented or cured by dietary regulation. Human subjects confined to an institutional diet known to produce pellagra, were completely protected from this disease by proper supplementation of the institutional diet (1). Ultimately, the existence of the P-P or Pellagra-Preventive factor was established (2).

From the similarity in natural distribution of the dietary factors effective in the control of human pellagra and canine blacktongue—as well as the pathology of these two diseases—the working hypothesis that canine blacktongue is the analogue of human pellagra was adopted (2). Techniques (2, 3) were devised for estimating the pellagra-preventive value of foods by feeding tests with dogs and the results checked by clinical observations with human subjects. The ability of a food to supplement basal diets—known to produce canine blacktongue or human pellagra—so as to prevent or delay the development of characteristic symptoms were the criteria employed for judging the P-P values of foods. Such tests using dogs or human subjects are still the most reliable methods for measuring the P-P potencies of foods (4, 5).

Although pellagra-producing diets may frequently be deficient in a number of essential nutrients (4, 6), the value of nicotinic acid or nicotinic acid amide for the treatment of the specific symptoms of blacktongue or pellagra is well established (7, 8). Recognition of the importance of nicotinic acid in human nutrition created a definite need for rapid methods of estimating the nicotinic acid content of foods. The possibilities of the reaction between nicotinic acid, cyanogen bromide and aromatic amines as a basis of a colorimetric method for estimating nicotinic acid are receiving consideration (9). However, cyanogen bromide and aromatic amines may react with a number of compounds containing the pyridine ring to produce a yellowish green color. Therefore, it is essential that the specificity of any method for nicotinic acid be clearly established before nicotinic acid values determined by the method can be accepted as indicative of the pellagra-preventive values of foods.

Permanent control of endemic pellagra will require inclusion of a larger number of the protective foods in the pellagrin's diet (4, 6). General improvement of diets by this means will serve to correct not only deficiencies of the P-P factor, but of other essential factors, as well. The value of commercially canned foods in a program designed to correct pellagra—as well as its attendant or secondary dietary deficiencies—might well be emphasized.

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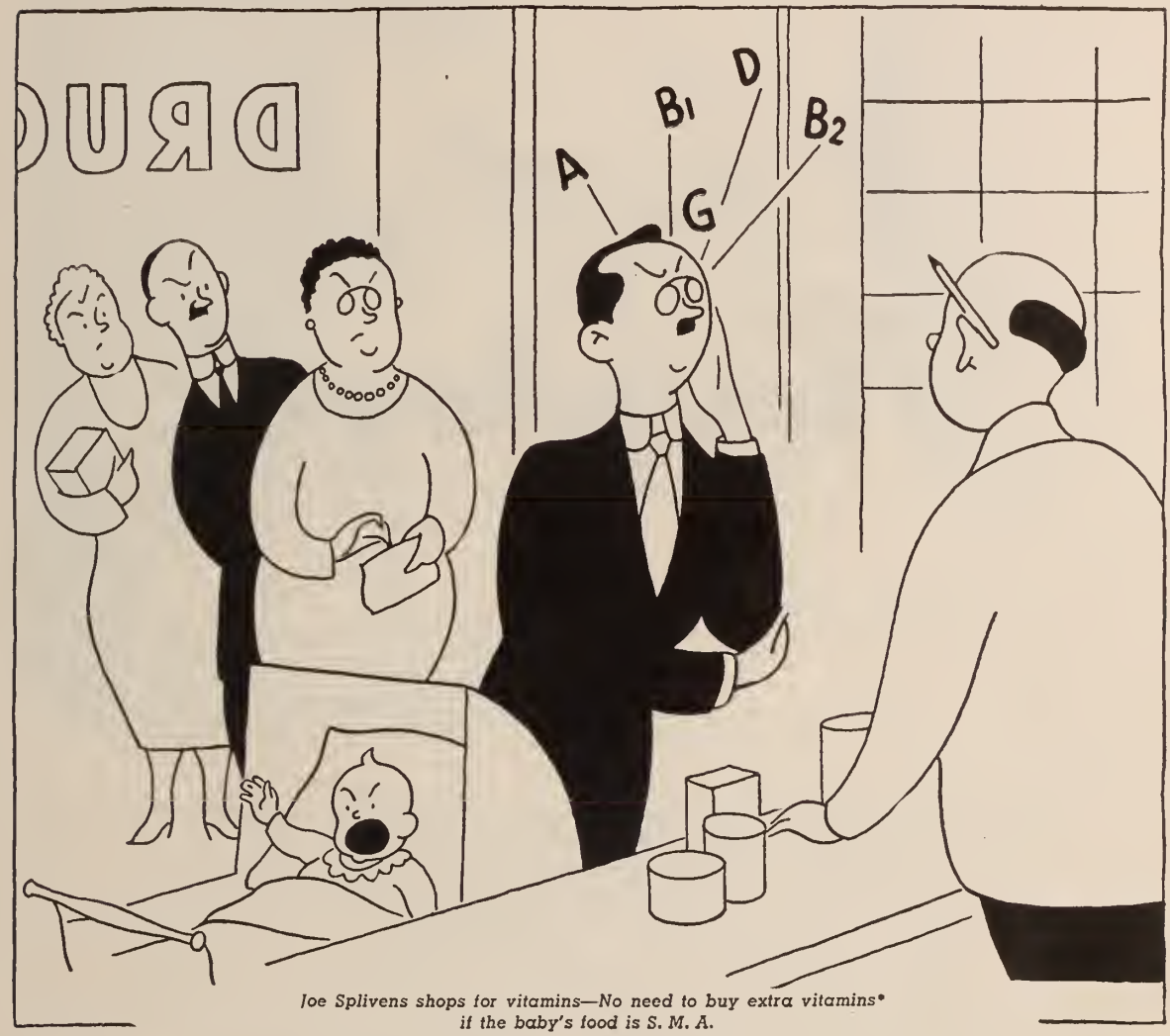
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1923. Ibid 38, 2361.
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1939. Biochem. J. 33, 264.

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Vitamins A, B_1 and D are included in S.M.A. in quantities sufficient to meet the needs of the normal infant. Only the addition of vitamin C, as supplemented by orange juice, is required, just as it is for breast-fed infants.

When diluted according to directions, each quart of S.M.A., ready to feed, provides not less than 200 International Units of vitamin B_1, 7500 U.S.P. units of vitamin A activity, of which approximately 333 U.S.P. units are in the form of Pro-vitamin A (200 gamma of carotene) and not less than 400 U.S.P. units of vitamin D in the form of cod liver oil.

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A few years ago, dietary fads included the use of "roughage" to whip the bowel into action. It was soon found, however, that the irritation produced by "roughage" was as deleterious as that resulting from irritant laxatives and cathartics.

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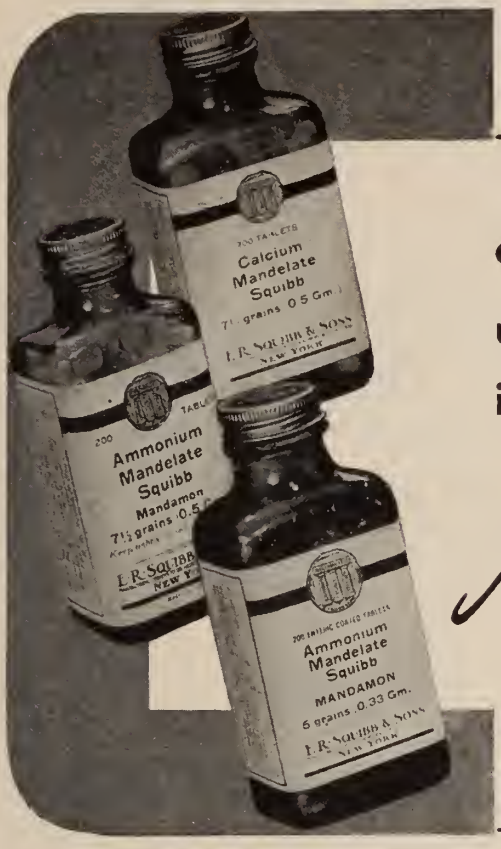
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To facilitate the control of urinary acidity, Nitrazine Test Paper and color chart are supplied with all bottles. With Nitrazine*—a sensitive indicator—one may accurately determine the acidity or alkalinity of the urine.

* A Squibb trade-mark.

[1] Cook, E. N.: *Minnesota Med.* 20:512, Aug. 1937.
[2] Carroll, G.; Lewis, B., and Kappel, L.: *J.A.M.A.* 107:1796, Nov. 1936.

For literature address Professional Service Department, 745 Fifth Avenue, New York, N. Y.

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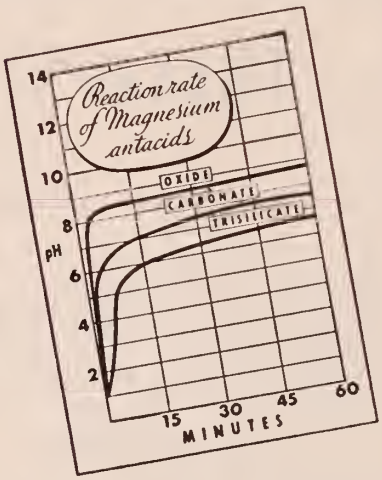
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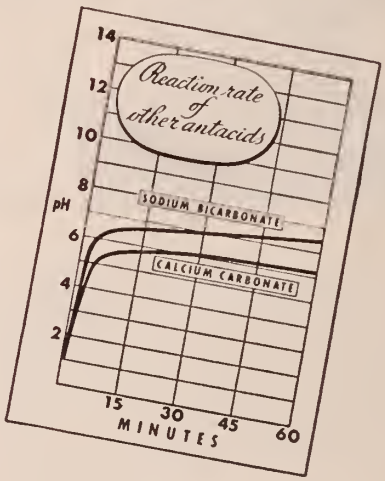
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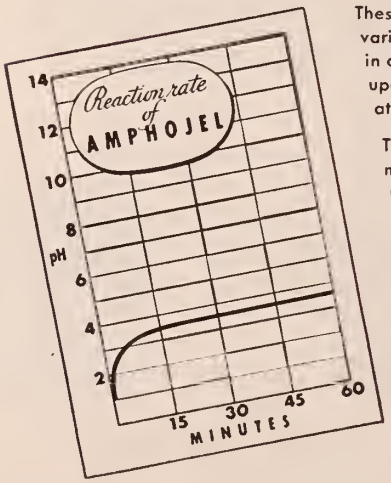
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There is growing recognition of the fact that it is unnecessary, and often undesirable, to neutralize completely the gastric chyme with alkalies and alkaline earths.





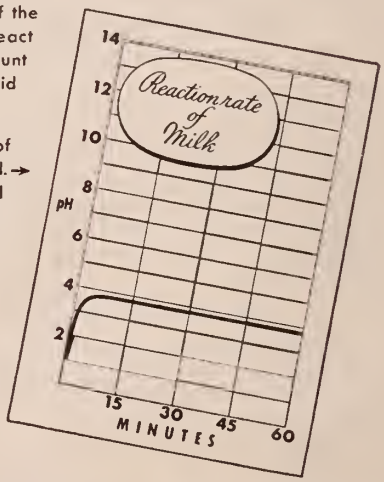


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—the new Vitamin D factor made available by the Whittier Process (activation of heat vaporized ergosterol by electrical energy)—is making brilliant clinical records in the systemic treatment of this prevalent disease.

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IS PURE GELATINE—
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ILLINOIS MEDICAL JOURNAL

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Editorials

ENGLISH STATE MEDICAL SYSTEM CAUSED A SERIOUS DECLINE IN HEALTH AVERAGE

On October 11, 1936, John S. Steele of London, England, published in the *Chicago Sunday Tribune* the following opinion: "The system of state medicine, inaugurated in 1911 with a great flourish and with much enthusiasm, today has few defenders, even among its so-called beneficiaries. It has been publicly stated, on many occasions, by doctors, coroners, hospital officials and others who are engaged in working the system that the practice of medicine has been reduced from a profession to a trade, made slaves of doctors and druggists, and has bred in the people a dangerous reliance on hurried and inefficient doctoring, which has caused a serious decline in the national health average."

ADVANTAGES OF PERSONALIZED MEDICAL SERVICE

The advantages of personalized medical service scarcely need be called to the attention of the practicing physician but this is a season of renewed activity in the political field bringing with it the need for again emphasizing certain medical values to legislators and to patients. To say to these people that our present system of practice is superior to politically subsidized—and therefore politically controlled—medical service does not ordinarily impress them. When descriptions are given of the inadequacies of foreign measures the very remoteness of the compared service makes the description uninteresting—everyone feels "it can't happen here." And the enthusiastic clairvoyants and wishful propagandists for political medicine assure all listeners that a plan in the United States would be much different than a plan any place else. So it is necessary to dig around in our own country, in an understandable environment, for instances of de-personalized service.

There is a type of practice in this country

which is frequently administered with more attention to holding down the costs of medical care than it is with the ideal of restoring the individual to a sound physical and mental state. This is so-called "insurance medicine" and usually occurs in situations in which inadequately financed and poorly managed insurance companies dominate the physician who looks to them for remuneration for his services to accident victims. The insurance companies watchword is *immediacy;* get the patient up and out and the release signed; make the treatment short and cheap or if not short, just make it cheap. There is, with regard to accident insurance, an old saw that a death costs less (to the insuror) than a deformed living victim. This sort of philosophy may be extended to say that a serious accident to an extremity costs less when quickly treated by an amputation than it does when treated expectantly—waiting for possible recovery without such mutilation. Yet this latter management is exactly the course pursued by any right-minded physician. It may be suspected that he is allowed, in many instances, to follow his judgment because of the influence of the reputable hospitals he works in—which is tantamount to saying that the medical community is neither sold out to nor controlled by any private or political subsidy. The physician who submits to or guides his policies by some subsidizing unit is veering close to charlatan practices.

Government subsidies in the field of medical care have everywhere resulted in a type of "insurance" against the cost of illness. And have practically everywhere resulted in charlatanry, deceit or, at best, a poor variety of medical service. Personalized study and care are not in it. Instances of the perversions in these subsidized systems are numerous. There are frequent revelations that in England the panel physician must keep a large panel, see patients quickly and frequently, and prescribe unnecessarily. Ethical practices in this country are probably not superior to those in England. A few years ago in Prague unnecessary hospitalization became a problem probably because the physician could make a little more money from the ambulance trip than he could from an extremely underpaid house-visit government schedule. To say that under any system the type of service depends upon the man rendering it is to be misleading. It would be better to insist that the type of man rendering the service depends on the opportunities the service affords him—opportunities to do good work, to give interested personal care. Obviously these carry with them the necessity of adequate financial reward.

Under any insurance plan the patient always has the idea that something is coming that he has already paid for. He generally intends to get back his cost and maybe a bit more. Privately arranged systems allow for the expulsion of this sort of person if he becomes a bother. Private medical care attempts to restore him to a balanced outlook through psychiatric management. A bountiful government guaranteeing some sort of costs for his care insures his being a permanent number in some harassed physician's panel.

Under individual care a great deal of time may be given a needy patient at one visit whereas under an insurance scheme, with its definite limitations on fees, the physician finds it impossible to do else than make a large number of visits. In the latter situation the *diagnostic* aspect of his work dwindles; medical practice without diagnosis as its mainstay is hardly a proper thing. In the long run, the numerous visits, which could have been obviated had a diagnosis been early established, produces high costs. In our age of mechanized diagnosis the public legislators and patients have become impressed with the tolerably rapid diagnostic revelations of the laboratories. It is time they were gaining an awareness of the fact that about eighty per cent. of our diagnostic information is gained from the history. It must be emphasized to them that the undramatic history-taking requires *time* and judgment.

Several years ago an insurance firm with Chicago offices was induced by a keen-minded member of its staff of young physicians to allow him to attempt to restore certain individuals to health rather than to merely make visits to ascertain the continuance of the patient's disability. This procedure required his spending a lot of thought and much more time with each patient but resulted in the cure of many individuals formerly discharged with lump sum settlements. This is an instance of enlightened policy urged on a reputable insurance company. It

is not especially representative of insurance practice.

Low cost must dominate any political administration of medical services. All known attempts at maintaining low cost service under institutional direction by government subsidy have resulted in a depersonalization of medical service with a consequent lowering of the quality of that service and an attendant deterioration of the abilities of the physician and, in many instances, has contributed to gross attempts on the part of the physician to secure adequate income through such charlatanry as superficial treatment, frequent contacts with the patient, and the provision of unnecessary treatment.

USING THE MEDICAL PROFESSION AS ITS CATSPAW

Shall Medicine and the allied professions be denied that important fundamental—equality of opportunity?

Regimentation or Americanism—which? Ask the Doctor.

This equality of opportunity is guaranteed to citizens by the declaration of independence and confirmed by the American Constitution. It is unfortunate that a destructive organized movement directed for several years past against this fundamental principle of human liberty should be using the medical profession as its catspaw.

To drug national senses against this statement as we will fails to change the situation. No amount of optimism of any degree stops the frightful parade of paternalistic doctrines and of bolshevistic tenets that are creeping into this great land under the banners of revision and revamping of the conduct of affairs medical. The medical profession quite generally admits frankly enough that some adjudication must be made between the cost of medical education, the cost of medical service to the public and—let this thought be well sunk into the minds of the laity—*the cost of medical service to the medical profession.*

Figures show and should convince the general public that in so far as material things are concerned, no profession, trade, craft, science or art repays so small a percentage for the time, money, health, strength and youth invested as does the practice of medicine. The clergy, of course, are not to be counted in this schedule, for with material things the clergy concerns itself not at all, nor are its profits so to be reckoned. Because medicine is the profession dealing most closely, outside of the church, with the humanities and with laws of health and nature that refuse standardization, medicine is the objective against which is aimed this totalitarian drive. What revision is necessary to be made in the cost of acquisition of medical knowledge and its disbursement is a technical matter that the medical profession is thoroughly capable of handling within the confines of its own level.

The doctors can lance their own carbuncles better than any neighboring baker or garageman can do this for them. The Hippocratian oath has already bound every ethical physician in stronger bonds of equal rights for mankind, brotherly consideration and the finer humanities than any regimented regime can evolve in the way of coercive contracts, collusive agreements or despotic standardization. When the truth stands revealed, the joke will be on regimentors. One of the first things the medical student learns is that there is no caste in birth or death. All that can be hoped for is "equality of opportunity."

Since medicine ranks next to the church in its unselfish spiritualities, having destroyed the church, naturally enough the next target of the Bolshevists in this America—whose wealth they envy and seek to ape,—is the destruction of the medical profession. But a snake is wily. Even as the Scripture saith, "These four things there be—the way of a maid with a man; of a vessel on the sea, and of a snake upon a rock. . ." So the serpent of Bolshevism wriggles gently into the picture through tall grasses and foaming seas the waste of the world around.

All the socialistic interference against which this journal has stormed and argued for over two decades from handicapping lay dictated legislation to the current motif of universities and corporations practicing medicine, are the illegitimate offspring of bolshevism playing the pretender to the rights of American citizenship and the American instituted equality of opportunity. Now, fire must be fought with fire. Catch a lion, not in the Maine woods but in the African jungles. Organized misrule is waging this devastating war that organized sanity must combat. The fight is immediate. It must be to a finish. Forces of medicine must organize

as never before to fight for the preservation both of the sanctity of their own standards and of true Americanism—the great equality of opportunity. After all, it matters less if man be "born free and equal" than if they are granted the postnatal opportunity for equality. Therein lies the stamina of nations.

Who has voiced this better than did Benjamin Franklin? When the Declaration of Independence had been signed, Franklin turned blithely to the group and remarked:

"Well, gentlemen. We had all better hang together now. For if we don't we shall hang separately."

Nor has the necessity for organization in all walks of American life had a better recommendation than comes from no less a person than a former Secretary of Commerce, Dr. Julius Klein, who said a short time ago over the Columbia network radio system:

"I hear some members of business bodies talking these days about the possibility of resigning from the organization, with the object mainly of supposedly saving money. I can think of nothing more dangerously extravagant than that—a wasteful squandering of that invaluable asset of good teamwork at the very time when collaboration is absolutely vital. When you are out in mid-Atlantic in a bad storm, do you see anybody shoving off from the big liner in a row boat by himself to save passage money? Well, hardly!

"* * * And so we may say that business collaboration is just applied common sense. The great British labor leader, John Burns, once told of visiting a lunatic asylum and of being astonished by the few keepers. 'What's going to happen,' he asked, 'if those maniacs get together and start something?' The doctor's answer was significant: *'Lunatics don't get together!'* And to that I might add: But sensible, far-sighted business men are not lunatics.

"I need not emphasize how tremendously valuable such cooperative services can be right at this present juncture in our American business life. It forms a potent factor in helping to boost us along the path that leads upwards to the plateau of prosperity, out of the distressing trough of depression."

Here is an instance where it will really pay medicine to take a leaf out of the ledgers of commerce.

Let us "hang together" so we will not "hang separately."

CLYDE DALE PENCE REQUIESCAT

Clyde Dale Pence breathed his last on December 1, 1939.

Doctor Pence was editor of the ILLINOIS MEDICAL JOURNAL from 1913 to 1920. The Doctor was 71 years old; he practiced medicine in Chicago for over thirty-three years born in Frederickstown, Ohio; was graduated from the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; for over twenty years was on the staff of the Grace Hospital, Chicago, and for many years on the staff of the West Side Hospital, from which he retired in 1929.

Doctor Pence will be best remembered by the doctors and his many friends because of his high and noble character. All respected him because of his outstanding integrity. The fact that he had been a real leader for the promotion of scientific and economic advancement of medical practice in Illinois for a third of a century is ample testimony of the strength of that character and high esteem in which he was held by his friends and fellow practitioners. His passing is a loss to us all.

Doctor Pence was a widower. Surviving is a brother Harry A. Pence, of Hinsdale, Illinois.

SENATOR BURKE'S ADDRESS RECORDED IN THE CONGRESSIONAL RECORD

The address "THE NATIONAL HEALTH ACT" by Senator Edward R. Burke of Nebraska before the Chicago Medical Society, December 6, 1939, was printed in the *Congressional Record* January 4, 1940. The complete address was published in the February, 1940 issue of the ILLINOIS MEDICAL JOURNAL.

The arguments used by the Senator in his address will prove valuable aid to the doctors in their campaign of education aiming to head off the socialization of medicine and other menaces embodied in the Wagner Act and other bills that are being sponsored in the national law-making body. The preservation of the address in the *Congressional Record* is quite fortunate. Doctors in general thank Senator Burke for his appre-

ciation of the profession in wanting this address permanently on record.

In the Senator's address he discussed some of the reasons why thoughtful people are disturbed over the trend towards political control of medicine and medical service. The National Health Program contains many features in which the public as well as the medical profession has a vital concern.

EVERY ETHICAL PHYSICIAN IN THE STATE SHOULD BELONG TO THE ILLINOIS STATE MEDICAL SOCIETY

In numbers there is strength. United we stand, divided we fall. A united medical profession can brush away any and all obstacles. It is next to impossible to find a really successful physician who has obtained fame outside the pale of organized medicine.

Are all the eligible physicians in your county members of your local medical society? If nonmembers of local society are discovered get busy and try to induce them to join at the earliest opportunity.

A.M.A. MEMBERSHIP AND FELLOWSHIP DEFINED

Every member in good standing in the constituent state medical association where he is engaged in practice, whose name is officially reported to the secretary of the American Medical Association for enrollment, becomes automatically a member of the American Medical Association and is not called on, as such, to pay any dues or to contribute financially to the association.

Members of the American Medical Association who graduated at recognized medical schools are eligible to apply for fellowship.

To qualify as a fellow a member in good standing is required to make formal application for fellowship, to pay fellowship dues and to subscribe for the Journal. Applications must be approved by the judicial council. Fellowship dues and subscription to the Journal are both included in the one annual payment of $8.00, which is the cost of the Journal to subscribers who are not fellows.

Only those members who qualify as fellows are eligible for election as officers; none but fellows may serve as members of the house of delegates; none but fellows may register at the annual sessions of the association or may participate in the work of its scientific sections.

Members of state medical associations pay dues to those bodies, but they pay nothing to the American Medical Association. Fellows pay dues and subscription to the Journal in the sum of $8.00 a year, which has nothing to do with county or state dues.

TAKEN FROM LETTERS SENT TO E. ST. LOUIS RELIEF OFFICE

My husband has worked one shift for about two months and now he has left me and I aint had no pay since he has gone or before either.

Please send me my elopment as I have a four months old baby and he is my only support and I need all I can get every day to by food and keep him in close.

I am a poor woman and all I have is gone.

Both sides of my parents is very poor and I can't expect anything from them as my mother has been in bed for one year with one doctor and she wont change.

Please send a wifes form to fill out.

Please send me a letter and tell me if my husban made application for wife and child.

I have already wrote the President and dont hear from you. I will write to Uncle Same and tell him about both of you.

Mrs has no clothing for a year and has been visited by the clergy regularly.

I cant get no pay. This is my 8th child. What are you going to do about it?

Sir: I am forwarding my marriage certificate and my two children one of whom is a mistake as you can see.

I am writing you to say that my boy was born two years ago and is two years old. When do I get my relief?

I am annoyed to find out you have branded my boy illiterite. Oh! for shame! It is a shame and a dirty like, as I married his father a week before he was born.

In answer to your letter I gave birth to a boy, weighing 10 lbs. 1 oz. I hope youre satisfied.

You have changed my little girl to a boy. Does that make any diff?

I have no children as my husband is a truck driver and works day and nite.

In accordance with your instructions I have given birth to twins in the enclosed envelope.—St. Louis Medical Bulletin.

PULMONARY TUBERCULOSIS IN SYPHILITIC PATIENTS does not respond as favorably to sanatorium treatment as does the disease in non-syphilitic patients but the course of syphilis in the tuberculous patient does not appear to differ from the course of the disease in the non-tuberculous.—Warring, F. C., Amer. Rev. of Tuber., Aug., 1939.

MEDICAL ECONOMICS

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Medical Economic Problems consumed the major part of the time of The National Conference on Medical Service, held on February 11 at the Palmer House in Chicago. The attendance was the greatest in the history of the meeting. The name—prior to this year has been The Northwest Regional Conference, but this year in view of the increased interest and the expanded scope of its program, the officers decided to change the name as above indicated. Twenty-six states were represented at the conference, and representatives from eleven states appeared on the program. Such wide attendance by both speakers and listeners evidences the interest of the medical profession in the economic problems before the profession.

Different plans for furnishing voluntary Group Medical care were presented by men from the different states, in which the plan is being tried. Most of them are still in the experimental stage and it is much too early to attempt to make a real evaluation of their efficiency and value to either the public or the medical profession. The proponents of each plan were enthusiastic, but admitted that it might be necessary to alter the plan as experience disclosed the necessity of so doing.

Of particular interest was the report of Dr. E. H. Cary of Texas, a member of the special committee appointed to confer with those in authority in Washington in regard to proposed legislation before Congress the past two years. While quite hopeful as to the present situation, with the apparent desertion of Senate Bill 1620, the so-called Health Bill of Senator Wagner; Dr. Cary did not feel that the medical profession had any good reason to feel that the dangers of legislation were over. He told us that the Interdepartmental Committee under the chairmanship of Miss Roche was to continue and that he was of the opinion that some legislation would be passed in regard to the building of hospitals by the Federal Government in those parts of the United States where definite need was shown. He intimated that an attempt was being made to allow the medical profession considerable influence in arriving at the decision as to the need of the community for increased hospital facilities.

The *Christian Science Monitor* of January 29, 30 and 31, 1940, contained a series of articles on Health Insurance written by Erwin D. Canham, a staff correspondent. These articles gave a most comprehensive review of the situation in regard to Health Insurance, particularly in Washington Circles. The writer recommends that every member of the profession, who can obtain copies of these three issues, read the same carefully. Coming from a non-medical source, even though greatly interested in the plan, the information contained therein can be quoted freely without the frequently present criticism of biased information. The article states that only five senators were definitely in favor of the Wagner Health bill, while 33 were opposed and the rest were as usual on controversial questions in an election year—on the fence. These articles stressed the great increase of illness in countries where a compulsory plan of health insurance was in operation and the cost of the same. They estimated that the annual cost would be 3 billion dollars when and if the plan got into full operation. Such a sum annually would necessitate an increase in taxes either directly or indirectly. And any such increase in taxes for this or any other cause is not popular at this time.

The Department of Public Health of the State of Illinois has just published a pamphlet on the The Maternity Hospital Law and the requirements for Licensure. This is of interest to all of the medical profession who do obstetrics in a hospital as well as to all members of the Board of Directors of Hospitals which have an obstetrical department. From a rather rapid study of the regulations it seems that they are quite fair and their state wide adoption will result in a better brand of obstetrics being practiced throughout the state. Every hospital should see that the minimal requirements of the

regulations are in force and additional rules and regulations should be adopted locally by the directors as the need arises to properly safeguard the patients in that department. Again the staff members of the local hospitals have a definite responsibility to see that the patients in their institutions receive the best possible care in the obstetrical as well as all other departments of the general hospital. It is only by the individual physician assuming that personal responsibility for the standard of care in the institutions in which he works, that definite progress can be made in improving the already high standard of the work of the medical profession, thereby answering the criticism being used against us by the reformers and uplifters.

Again the Medical Economics Committee wish to bring to your attention the fact that a special sub-committee therefrom has been working on the subject of Voluntary Health plans for Illinois according to definite instructions received from the House of Delegates at their 1939 meeting in Rockford. Under the chairmanship of Dr. W. M. Hartman of Macomb, they have done a difficult task. Plans of same nature are being either considered or put in operation in most of the states of the nation. In some of the states, such as New York, four separate and distinct plans are in operation. To study each plan, outline it and then evaluate it in comparison with other plans accorded the same consideration is a Herculean task. We hope to have a definite recommendation to present to the House of Delegates when it meets at Peoria in May. If any of the members of the Illinois State Medical Society has any ideas or suggestions as to any plan or the nature of the report, we hope that he will get in touch with Dr. Hartman of Macomb in the near future, so that he will have the time to study the suggestions and talk them over with the remainder of the Committee.

The writer recently received an editorial printed in the *Bardolph News* of Bardolph, Illinois on February 15, 1940. We hope that the Editor will find space to print it in this issue of the Illinois Medical Journal, for it shows that the public is taking an interest in the problems of the medical profession and are voicing their opinion.

The Peoria meeting of the Illinois Medical Society will be the one hundredth anniversary of the founding of the Society. It has been decided to make this a cause for special attention by issuing a special gala edition of the Illinois Medical Journal. To do so will require the cooperation of many members of the medical profession, who should be able to furnish special information desired by the editor. It is to be hoped that such cooperation will be furnished promptly when the request therefor is made.

E. S. Hamilton, Chairman.

THEY CAN'T BE BOUGHT

Word comes from New Zealand that practically all of the thousand physicians there have refused to accept a $7,500 yearly income guaranteed by the New Zealand government, on the understanding that these physicians will become cogs in a socialized medicine system. This sum, it appears, is more than the average New Zealand physician has ever earned or ever expects to.

This news from another part of the world may help to change an apparent conviction on the part of a good many Americans that the opposition by our doctors to compulsory sickness insurance and other medical affairs in this country is based on an entirely mercenary condition.

As a matter of fact, doctors are the same the world over. Whether in America or in New Zealand they spend hours away from their paying practice, giving their services to the poor: they oppose socialized medicine as something that would hurt patients, the public and themselves. Heretofore they have only been privileged to shrug when their motives were challenged. Now, by the action of these New Zealand physicians, the profession has been put to the test. —*The Bardolph News.*

East St. Louis, Ill.
Feb. 24, 1940

Correspondence

PERSONALITY A FACTOR

To the Editor: I have just finished reading your editorials in the January issue of the Illinois Medical Journal. They are so timely and needful in this day that I want the privilege of complimenting you upon your acute insight.

It seems to me that you could not have chosen a more opportune time to publish them; for they appear just at a time when some of our own leaders in the fight against socialized medicine

are manifesting shifting opinions that cause our opponents to assume that organized medicine is beginning to see things as they would have us see them.

I cannot agree with those who think that organized medicine should make some compromise with the forces that ask for a regimentation of the Medical profession. It seems to me, that now is the time to hold fast to the things that are ours. If we fail to do this, we will turn the sick over to the politician and put ourselves under the domination of the social workers. The cry, that there must be made available a scientific medical service, is not only void of sincerity, but shows a lack of knowledge of the art of medicine. Members of organized medicine are not only willing that all should have the best medical service, but have always labored and given freely of their time and talent that this could be.

This we must remember; sympathy is the tune that is being placed on the social workers' piano. Let us not be fooled by it. If the social workers are sincere and honest in their appeal that scientific medicine should be made available to all, they will leave the care of the sick in the hands of organized medicine, free from political control and lay interference.

The doctors are the only men that can, and will, bring into being an adequate medical service to all that will accept such a service. But for this to be, the doctor must be left free to act when service is needed, without waiting to have a roll of political red tape unwrapped.

The Universe belongs to God because He created it. He will continue to own it and control it. For the same reason; the art and science of medicine belongs to the doctor and the doctor will retain this ownership and control, regardless of all opposition. Our progress will be slowed by the interference of others, but in the final analysis the doctor will remain in control.

I hope that every physician in our Society reads the comment on personalization, for, in this we have a power that will defend us against any attack regardless of its source, except within our own ranks. Our opponents are making use of this power, but if we, as doctors, will return to the sincere personal relationship with our patients, we will make it a hard task for anyone to take them from us, regardless of what is offered. We are interested in our patients, but are our patients interested in our welfare? Close personal interest will bring this about.

You and I know that only about one per cent. of the sick are scientifically sick, or require the science of medicine to reveal the cause of their sickness, and no more then one per cent. require, or will get well under scientific treatment. The much larger group will fare far better if cared for by their family doctor. With the large source of research work that is now available, and in need of patients to carry on the work, this small group could be cared for through this channel, without altering the present medical service to the larger group. It will also spare them from being subjected to all the unnecessary examination required to make a scientific medical diagnosis, for the individuals who are functionally sick will not respond to such scientific treatment. It seems to me that this method would make available to all who are in need, a like medical service.

The difference in medical educational attainments is an argument advanced as a reason why our present medical service should be altered. I think if this is looked into closely we will discover it is best for the public at large, that there does exist a difference in this respect, as this relates itself to the care of the sick. If it were possible to have every physician with the same educational standards; which I do not believe possible, as every human brain is different and will not produce from the same training, a like mind; the term ignorance, would, after all be only relative. If the social worker considers the question of educations so important in the treatment of the sick, organized medicine can well ask of those who would regiment the medical profession, how important is the question of ignorance in the ranks of those who would tell the sick when he needs a physician, and what doctor he may have. Any intelligent person who looks back over the past two decades can well ask, "after all, what has education done for the masses?" There has been no reduction in proverty or crime. There is no higher degree of honesty in public places, and man's cruelty to man is no less. Will doctors render a better and higher type of medical service, because they are regimental and controlled by a group that has not learned how to be true to the public trust?

Regimentation creates an unnatural condition

under which man cannot and will not make progress uder any form of government. God created man an individual and his nature demands a certain degree of individual freedom, or he becomes a destructive being. One needs only to review history since the first attempt was made to regiment man, to prove this statement. There still remains another attribute in man that must be solved and understood before man can be regimented and make progress (regardless of how ignorant or educated he may be) and that is the power within man to develop what is known as personality, which is the total sum of man. As far as I have observed, there are no two personalities that are alike, and all react differently to each stimulus. Until each personality is alike man must be permitted to be an individual. It was no other than the scientist Benjamin Franklin who said, "Man *is* a soul and has a body," in contrary to the usual thought that, "man is a body, and has a soul."

Medical science was the first to recognize this attribute in man, and medical science has studied man as an individual and has developed the science of medicine along this line. Therefore, the doctor knows man as an individual who has a personality. It was a doctor who first recognized that a human being was more than a body. If medical science only had to know the anatomy and physiology of man, and if only man's body was affected by disease, then I could understand how medical care of the sick could be distributed en masse, under the system proposed by those who would have the doctors regimented and directed by the social workers. Then, all who entered the medical profession would receive the same training and be assigned their quota of patients and all sick would be treated the same, that had the same diagnosis as the cause of their illness. This would be scientific medicine for all classes and rendered to all alike.

We, as physicians refuse to be regimented under any of the plans submitted by the Federal Government and the social worker, because we are convinced that none of these plans will serve the best interests of the sick. The doctor knows that a man's personality gets sick and that his personality is affected to a more or less degree by the condition of his body. The doctor knows that a deranged personality can be treated only by a physician who understands the patient's personality and in whom the patient has confidence. This is our principal objections to the interposing of a third party. It is interference with the power of personality that we are convinced has a stronger restorative effect than any scientific approach. We meet the needs of the majority of the sick, and the present methods of caring for them is of a personal nature. Therefore, we ask that we be permitted to carry on with our present system, free to make any changes that we feel will be for the just interest of the sick.

We are aware that our present system has its faults, but, we are convinced that they are far less than the faults of socialized medicine, and that we understand our own faults and can correct them ourselves, better than any outside group. We can deal with them better than the faults of some new plan with which we are not acquainted.

We, the members of organized medicine continue our fight for freedom from governmental domination because we are convinced that it will retard the progress of medical science; that the government cannot fulfill its promises to the sick, and that an adequate medical service cannot be rendered under any of these plans.

Charles S. Skaggs, M.D.

FINNISH RELIEF FUND, INC.

New York, Feb. 21, 1940.

To The Editor:

The Finnish Relief Fund Inc., is sponsored by Mr. Herbert Hoover. It is approved by the Finnish Minister in Washington D. C., His Excellency Hjalmar Procopé.

It has the main purpose of accepting for the Finnish people and transmitting to Finland any funds contributed for this great cause by the American people.

Contributions, unless specifically intended to be used for war material, will be used for food and clothing for the Finnish civilian population, many of whom are suddenly made homeless by having their houses irreparably demolished by the incendiary bombs from Russian aeroplanes.

Members of the American Medical Association are the only doctors who will be asked to contribute through this Fund.

It is hoped the profession will respond as generously as possible. It is further hoped that every doctor will make some contribution and

no matter how small it may be, it will be gratefully accepted. We believe the profession should have one hundred per cent of its members become contributors to this most worthy cause.

No money is deducted for expenses from any contribution made through this Fund, and every dollar donated arrives in Finland worth one hundred cents.

No salaries are paid and no financial remunerations are made to officers on duty with the Finnish Relief Fund. Expert auditors make a daily checkup of the donations acquired and chart the results.

The National Chairman of the Medical Division of the Professional Groups of the Finnish Relief Fund, Inc., is Dr. John Frederick Erdmann of New York.

A director (chairman) for the Medical Division has been or will be appointed from each state who will try to get in touch with every member of the American Medical Association of that state by such method as he deems best.

The Executive Director of the Medical Division is Dr. Kerwin W. Kinard who has offices at Fund Headquarters.

All checks should be made payable to the Finnish Relief Fund, Inc., and sent to the Medical Division of the Finnish Relief Fund, Inc., 120 Lexington Avenue, New York N. Y.

THE EXPENDITURES FOR AUGUST AND SEPTEMBER, 1939, OF 512 FAMILIES OF THE CHICAGO RELIEF ADMINISTRATION

(Continued from page 123)

Fuel. Fuel is one of the three items for which money is provided. At the time of year of the study only fuel for cooking was allowed. As shown in Table I, 54 per cent. of the families paid more than was allowed for this purpose. 19 families paying when no allowance was granted. Thirty-three per cent. paid more than half again as much for fuel as provided. Although practically everyone paid something on his cooking fuel bill. *25 per cent. owed money for fuel.*

Clothing. The Relief Administration plans that a considerable part of the clothing for families on relief be provided from the W.P.A. sewing project. Actually, however, the distribution of clothing does not keep pace with needs. No one lack was expressed by the families more frequently and with greater concern than that of clothing. Attendance at school and the approach of cold weather make additional clothing imperative. Although one per cent. of the families reported the receipt of money for clothing in the period studied, 43 per cent. found it necessary to buy clothing, as shown in Table 6. These purchases were frequently shoes and stockings. Among the 512 families, 294 spent nothing for clothing during the period. One hundred and four families, spent less than $2.00 while the remainder, 114 families, spent amounts all the way from $2.00 to $25.00 for this item.

Other Expenditures. Allowances are not usually made for light, cleaning supplies, and certain other necessary expenditures. In the month covered by the study, 97 per cent. of the families were allowed nothing for light but 53 per cent. paid for light even though given no money for this purpose.

Although no allowance is made to C.R.A. families for cleaning supplies, 26 per cent. paid for this item more than thirty cents per person a month, which has been estimated as a reasonable amount. As shown in Table 5, 23 per cent. paid from twenty to thirty cents and 34 per cent. paid less than twenty cents. Far from being negligible these amounts constitute a relatively large percentage of the meager amount of money provided the families for other purposes.

Incidental Expenses. Even after the regular living expenses are met, still further inroads are made into the slim budgets by the many items incidental to daily life. In no case was money for ice allowed, but in August and September, the months included in the study, 38 per cent. of the families reported expenditures for ice, as shown in Table 1. As indicated in Table 7, 20 per cent. not budgeted for transportation spent money for this purpose. Although no money is given for school supplies, insurance, and recreation, 4 per cent. of the families reported expenditures for school supplies, 2 per cent. for insurance, and 1 per cent. for recreation. In addition to these, expenditures were reported for such items as newspapers, hair-cuts, telephone calls, church offerings and cod-liver oil. The psychological importance of these small items is illustrated by Mrs. M.'s plight.

"What shall we do about the school supplies our children need? Our boy in high school must

have gym shoes, the girl needs paints. She was asked to get six colors, they are only ten cents each but that means sixty cents. Our high school girl had asked to be excused from swimming because she has no suit, but they will not excuse her. The children are ashamed to go to school. They don't want anyone to know. What shall we do?"

Saving face among children must be respected, but how, when the relief allowance does not cover necessities, can the need be met for all the little extras which every self-respecting person, especially adolescent children, feels so keenly?

Debts. One of the most disheartening findings of the study is that such a large number of the families are going into debt. To the general observer some relief families may seem to be getting along about as well as before the budgets were curtailed. What is not evident is that they are doing so only by owing the landlord, the grocer, the gas and electric companies, relatives, or neighbors. It will be noted in Table 8 that 53 per cent. owed for rent, 45 per cent. owed for food, 29 per cent. for light, 25 per cent. for cooking fuel, 3 per cent. for clothing, and 3 per cent. for ice. *Seventy-seven per cent. of the entire number of families interviewed were in debt.*

Comparison of Negro and White Families. Included in the study were 368 white families, 123 Negro, 17 Mexican, two Filipino, one Indian, and one Puerto Rican. This representation of different groups in Chicago is far too small a sample to warrant comparative analyses. However, as a matter of interest, a careful examination was made of the expenditures for rent and food by the Negro and white families. The findings from the families included in this study give no indicaton of significant variations between these two racial groups with respect to their major expenditures during August and September.

Relief Situation Since November Fifth. Since the data discussed above were gathered, the relief situation in Chicago has changed. Since November 5, allowances have been increased from 65 to 80 per cent. of the budget. In addi-

TABLE 2. STUDY OF 512 C.R.A. FAMILIES: RELATION BETWEEN EXPENDITURES FOR RENT IN TERMS OF THE ALLOWANCE AND EXPENDITURES FOR FOOD IN TERMS OF THE COST OF A MINIMUM ADEQUATE BUDGET DURING AUG. OR SEPT., 1939

Adequacy of food	Families spending more than allowed for rent		Families spending less than allowed for rent	
	N	%	N	%
100 or more	3	.7	4	4.4
90—99%	5	1.2	2	2.2
80—89%	7	1.7	9	9.9
70—79%	12	2.9	19	20.8
60—69%	33	7.8	15	16.6
50—59%	70	16.6	19	20.8
40—49%	94	22.3	13	14.3
30—39%	86	20.4	6	6.6
20—29%	61	14.5	2	2.2
Less than 20%	50	11.9	2	2.2
Total	421	100.0	91	100.0

TABLE 1. STUDY OF 512 C.R.A. FAMILIES: MAJOR EXPENDITURES IN RELATION TO THE RELIEF BUDGETED OR ALLOWED DURING AUGUST OR SEPTEMBER, 1939.

	Families paying more than budgeted		Families paying amount budgeted		Families paying less than budgeted: more than allowed		Families paying amount allowed		Families paying less than allowed		Families paying: not allowed		Families not paying: not budgeted		Families not paying: budgeted		Families owing	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Rent	111	21.7	218	42.6	92	18.0	0	0	34	6.6	0	0	16	3.1	41	8.0	269	52.5
Food	7	1.4	0	0	74	14.5	1	.2	429	83.8	0	0	0	0	1	.2	228	44.5
Fuel for cooking	149	29.1	18	3.5	88	17.2	3	.6	32	6.2	19	3.7	138	27.0	65	12.7	127	24.8
Light	4	.8	2	.4	6	1.2	0	0	1	.2	273	53.3	226	44.1	0	0	149	29.1
Ice	0	0	0	0	0	0	0	0	0	0	196	38.3	316	61.7	0	0	14	2.7

SUMMARY

Food .....84% of the families spent *less than* the amount allowed.
Rent .....82% " " " " *more than* " " " .
64% " " " " " " 150% of the amount allowed.
Cooking fuel .....54% " " " " " " the amount allowed.
Light .....56% " " " " " " " "
In only 13 cases out of the 512 was light allowed.
Ice .....38% of the families spent *more than* the amount allowed. In no case was ice allowed.

TABLE 3. STUDY OF 512 C.R.A. FAMILIES: COMPARISON OF FOOD ALLOWANCES WITH AND WITHOUT SURPLUS FOODS IN TERMS OF ADEQUACY DURING AUG. OR SEPT., 1939

Adequacy of food	No Surplus Foods Number of families	No Surplus Foods Per cent of families	Surplus Foods Included Number of families	Surplus Foods Included Per cent of families
100% or more	7	1.4	23	4.5
90—99%	7	1.4	22	4.3
80—89%	16	3.1	54	10.5
70—79%	31	6.1	69	13.5
60—69%	48	9.4	95	18.6
50—59%	89	17.4	87	17.0
40—49%	107	20.8	84	16.4
30—39%	92	17.9	55	10.7
20—29%	63	12.3	18	3.5
Less than 20%	52	10.2	5	1.0
Total	512	100.0	512	100.0

tion an allowance has been granted for light. Since November 13, milk has been available to all families desiring it in the amount of one quart daily for every child up to his seventh birthday and one pint daily for all other children and for adults. The addition of the retail price of milk to the present food allowances of the families interviewed materially increases their value, the average increase being approximately 20 per cent. of the food budget. The milk supplementation contributes most to the allowances of large families, especially to those of families having several children under seven years of age, and least to the allowances of small families of adults. The addition of milk and of surplus foods would bring the estimated allowance for food close to minimum adequacy, if not equal to it, in a large number of cases.

The situation, however, is far less favorable than this would seem to indicate. Surplus foods vary so greatly in amount and kind that they cannot be regarded as a dependable supplement to the food allowance. It is also highly questionable whether surplus foods should be included in determining the adequacy of the food budget since their inclusion defeats the original intent in the establishment of surplus food commodities. The Federal Surplus Commodities Corporation has ruled that they shall not be included in determining the food budget standard.

If the theoretical adequacy of the food allowance on its increased basis with milk and surplus commodities is assumed, its real adequacy is threatened since it continues to be drawn on to meet unbudgeted needs such as clothing and budgeted items such as rent for which the allowance is still below standard.

Inadequacy in Rent Allowance and Effect on Other Items in Budget. The most striking evidence of the inadequacy of the 80 per cent. allowance is to be found in calculations concerning rent. It has been noted that among the 512 families for whom expenditures were recorded for August and September, 421 families or 82 per cent. were paying rent beyond the allowance for that purpose (Table 1). Over one-fifth were paying more than the maximum amount budgeted for rent. This number did not include families who had not been able to meet their rent at all for the month of the study, or met it only in part—a practice commonly reported.

Individual records were re-examined to determine how many of the families paying more than the rent allowance would be able to pay the same

TABLE 4. ANALYSIS OF PROTECTIVE FOODS CONSUMED DAILY PER PERSON BY 512 C.R.A. FAMILIES DURING AUGUST OR SEPTEMBER, 1939: AMOUNTS OF (1) MILK, (2) FRUITS AND VEGETABLES, INCLUDING POTATOES (3) MEAT, FISH OR EGGS

Amount per person per day	Number of families having specified amount	Per cent of families having specified amount
1. MILK		
More than 4 cups	7	1.4
Three and 4 cups	26	5.1
Two cups but less than 3 cups	76	14.9
One cup but less than 2 cups	213	41.6
Some milk but less than 1 cup	171	33.5
None	18	3.5
2. FRUITS AND VEGETABLES INCLUDING POTATOES		
More than 3 servings	71	14.4
Three servings	76	15.3
Two servings	156	31.4
One serving	121	24.4
None	72	14.5
3. MEAT, FISH OR EGGS		
More than 3 servings	0	0
Three servings	26	5.3
Two servings	117	23.6
One serving	206	41.5
None	147	29.6

SUMMARY

MILK: Seventy-nine per cent of the families had less than one pint (2 cups) daily per person. One pint of milk is generally accepted as the minimum daily requirement for adults, and children should have more.

FRUITS AND VEGETABLES, INCLUDING POTATOES: Seventy per cent of the families had less than three servings daily of fruits and vegetables. Three servings is generally accepted as the minimum daily requirement for both children and adults.

MEAT, FISH OR EGGS: Thirty per cent of the families had no meat, fish or eggs on the day studied. One serving of these protein foods is generally accepted as the daily requirement.

rent within the amount allowed on the new basis of the 15 per cent. increase. It was found that 74 per cent. of all the families reported would still pay more for rent than the amount designated for that purpose.

The fact that 111 families, or over one-fifth of the group studied, paid for rent more than their budget for this item and that 269 families owed for rent seems to indicate the need of a review of the relief budget with reference to rent. Even an allowance of 100 per cent. of the rent budgeted will be inadequate if the budget is not realistic in terms of what clients actually have to pay for shelter. Certainly an allowance still further below an already too low level may become tragic in its effect on the whole standard of living.

Unmet Clothing Needs. The small expenditures recorded for clothing among the families studied can be partially explained by the fact that the weather was warm during the period when the data were assembled and cotton clothes suitable for summer were available from the W.P.A. sewing project. Even so, in the majority of cases clothing needs were cited—some of them extreme. Moreover, these small expenditures take on new proportions in relation to their effect upon an already meager total allowance and to the food allowance which must of necessity be robbed if these unbudgeted needs are met. Such expenditures will necessarily be larger now if clothing suitable for winter is purchased, such as stockings, warm underwear, coats and suits. These are not available through the sewing project.

Unless clothing becomes an item allowed in the budget families will suffer. Even necessary purchases made at the expense of the food allowance will not be sufficient to meet clothing needs for the winter months.

Present Allowance in Relation to Other Necessities. The study has shown that families have purchased cleaning supplies and personal incidentals even though these items were not budgeted. The present relief policy fails to make any provision for these items and only meagerly meets the needs for household equipment and supplies. Unless these essential family needs are regularly budgeted they will continue to be

TABLE 5. STUDY OF 512 C.R.A. FAMILIES: EXPENDITURES FOR CLEANING SUPPLIES AUGUST OR SEPTEMBER, 1939

Amount Spent for Cleaning Supplies Per Persons Per Month	Number of Families Spending Specified Amount	Pct. of Families Spending Specified Amount
More than 30 cents	135	26.4
20 to 30 cents	115	22.5
Less than 20 cents	172	33.6
Not reported	90	17.5

TABLE 6. STUDY OF 512 C.R.A. FAMILIES: CLOTHING EXPENDITURES AUGUST OR SEPTEMBER, 1939

Amount Spent for Clothing Per Family Per Month	Number of Families Spending Specified Amount	Pct. of Families Spending Specified Amount
$15.00-$25.00	3	.5
10.00- 14.99	4	.8
5.00- 9.99	34	6.6
4.00- 4.99	20	4.0
3.00- 3.99	17	3.3
2.00- 2.99	36	7.0
1.00- 1.99	52	10.2
Less than $1.00	52	10.2
None	294	57.4
Owed	16	3.1

TABLE 7. STUDY OF 512 C.R.A. FAMILIES: FREQUENCY OF EXPENDITURE FOR MISCELLANEOUS ITEMS, AUG. OR SEPT., 1939

Items	Number of Families Purchasing Specified Items	Pct. of Families Purchasing Specified Items
Transportation	103	20.1
Drugs	25	4.9
School supplies	18	3.5
Insurance	11	2.1
Tobacco	11	2.1
Recreation	7	1.4
Shoe repair	5	1.0
Toilet articles	5	1.0
Church	4	.8
Laundry	4	.8
Sewing supplies	4	.8
Newspapers	3	.6
Stamps	3	.6
Coal	2	.4
Hair cut	2	.4
Telephone	2	.4
Others	27	5.3

(Baby buggy, baby crib, baby needs, candy, clock, cooking utensils, cosmetics, curtains, dentist, dishes, doctor, dog food, frying pan, furniture bill, glasses repaired, lamp, matches, moving, paint, payment on farm, razor blades, tailoring, toaster, towels, wash boiler, washing machine, x-ray of ear.)

TABLE 8. STUDY OF 512 C.R.A. FAMILIES: FREQUENCY OF OCCURRENCE OF DEBTS, AUGUST OR SEPTEMBER, 1939

Items for Which Debt was Incurred	No. of Families Incurring Debts	Pct. of Families Incurring Debts
Rent	269	52.5
Food	228	44.5
Fuel for cooking	127	24.8
Fuel for lighting	149	29.1
Clothing	16	3.1
Ice	14	2.7
Total cases with debt	396	77.3

purchased with money allowed for more basic needs, especially food.

A food allowance adequate in itself dwindles to startling inadequacy unless all necessary expenditures are provided for at an adequate level.

EDUCATIONAL COMMITTEE

January and February, 1940

SPEAKERS BUREAU

85—Public meetings were addressed by doctors scheduled through the Educational Committee. The subjects presented indicate the type of program popular with the laity.

Health of the Business Woman
Infantile Paralysis
The Adolescent—and other talks on child care
Socialized Medicine
Our Social Disease Problem
The Wagner Act
Allergy
Cancer Control
Streamlining Motherhood
Pneumonia Precautions
Maintaining Mental Health
Dietary Indiscretions
The Skin and Cosmetics
Colds and Sinus Disease

Particularly interesting are the reports which came in about talks on Socialized Medicine.—

"Excellent. Fine material and brought out points and information we could not get from the newspapers."

"A fine presentation which gave the men something to think about."

RADIO

35—Programs were given over Chicago stations, representing a total of 525 minutes or 8 hours and 45 minutes. Stations used were WGN, WJJD and WHIP. Copies of the talks were sent to downstate societies sponsoring programs over local stations.

Special publicity was given to these health programs and monthly announcements of the programs sent to a mailing list of about 2,000.

The Committee assisted in giving special publicity to the talk on Socialized Medicine given by Dr. Preston Bradley for two branches of the Chicago Medical Society. Announcements of the broadcast of this talk were sent to officers of county medical societies as well as to laymen.

SCIENTIFIC SERVICE

The Scientific Service Committee receive an increasing number of requests from county societies.

88—Scientific papers were scheduled for January and February by the Committee.

Subjects requested were as follows:

12—Pneumonia
18—Obstetrics
15—Pediatrics
2—Medical Economics
4—Orthopedic
1—Mental Hygiene
4—Migraine
6—Surgery
8—Gastro-Intestinal
1—Oral Surgery
1—Chest Surgery
6—Dermatology
3—Endocrinology
2—Pathology
1—X-Ray
1—Urology
1—Eye
2—Cancer

The Committee wishes to report that mimeographed copies were made of the talks given at the Post-Graduate Conference, Urbana in December. These were sent with the Compliments of the Educational and Post-Graduate Education Committees to all men attending that Conference. They were favorably received.

The Committee assisted the Ravenswood Hospital of Chicago in arranging a Clinical Conference on January 31st. This Conference had an attendance of more than 150 doctors.

The third Post-Graduate Education Conference sponsored by the State Medical Society was scheduled for March 7th at DuQuoin, Illinois.

MISCELLANEOUS

Letters were sent to 200 principals of high schools in Illinois offering the services of the Educational Committee for assembly programs in commemoration of the 100th Anniversary of the Illinois State Medical Society.

Two publications of the National Physicians' Committee were sent to more than 1,500 individuals on the mailing list of the Educational Committee.

ANNUAL MEETING

Hall of Health—

The Committee sent letters to all prospective exhibitors for the Hall of Health and to date has 25 applications for space. A follow up has been sent with a request that all applications be mailed immediately and it is expected that the number will be much larger than last year.

Publicity—

1,500—Copies of a story on "A Hundred Years Old" have gone to newspapers and laymen in the State.

The Committee suggested a special Sunday supplement for one of the Peoria newspapers prior to the meeting. Two newspapers will carry the supplement.

Picture Gallery—

Letters were sent to officers of county medical societies urging them to secure photographs and interesting information about medical pioneers in their localities. These will be sent to Dr. Camp for exhibit at the Hall of Health and later added to the permanent collection of the Illinois State Medical Society.

SPECIAL MEETINGS

The Committee was represented at a conference of Summer Round-Up Chairmen of the Chicago district

of the Illinois Congress of Parents and Teachers. Doctor George L. Drennan and Miss McArthur were both asked to participate in the program.

Letters were sent to the Branch Officers of the Chicago Medical Society telling them about the Summer Round-Up campaign sponsored by the Parent Teacher Association and suggesting their cooperation.

The Secretary attended a meeting of the Cancer Committee of the State Medical Society.

An exhibit was arranged for the Dental Meeting at the Stevens Hotel.

NEWSPAPER SERVICE

Press articles written and approved:
We Honor a Great Benefactor
Head Injuries
Nephritis
A Hundred Years Old
The Life of Paul Ehrlich
Have a Heart
Hypertension
Cardiac Irregularities
Abdominal Pain in the Child
One Hundred Years of Progress in Medicine
Scarlet Fever.
Pneumonia Control
Are You Anemic?
Respiratory Infections

670—Health columns to newspapers downstate
98—Health columns to Chicago newspapers
1,143—Editorial style health columns to newspapers
912—Health articles to hospitals
952—Health articles to libraries
9,982—Health articles to lay list of teachers, health leaders, etc.
1,500—Announcements released about Dr. Bradley's broadcast
500—Notices sent concerning February 7th meeting Chicago Medical Society
1,180—Invitations sent to doctors for Ravenswood Hospital meeting
100—Posters of Ravenswood meeting to hospitals and medical schools
1,500—Booklets on "Priceless Heritage" published by National Physicians' Committee sent to lay list.

PUBLICITY FOR COUNTY MEDICAL SOCIETIES

36—Releases for Effingham
49—Releases for Whiteside
40—Releases for Knox
62—Releases for LaSalle
57—Releases for Lee
59—Releases for Bradley lecture
59—Releases for Ravenswood meeting
15—Releases for Ravenswood meeting for medical bulletins
8—Releases for North Shore meetings
43—Releases for Henry
75—Releases for McLean
86—Releases for DuQuoin Post-Graduate Conference

SERVICE TO COUNTY MEDICAL SOCIETY

300—Pneumonia Handbooks sent to officers of all county medical societies and officers of Branch of Chicago Medical Societies.

Notices of County Medical Society Meetings sent to doctors:

158—Notices sent for Effingham County
466—Notices sent for Knox
243—Notices sent for Whiteside
600—Notices sent for LaSalle
100—Notices sent for Lee
143—Notices sent for Perry
122—Notices sent for Jefferson-Hamilton
162—Notices sent for Henry

Letters were sent to all secretaries of county medical societies re suggestions for program for Secretaries' Conference at the Annual Meeting.

Respectfully submitted,
Jean McArthur.

IT IS INCREDIBLE THAT ANY PHYSICIAN CAN DIAGNOSE AND PRESCRIBE AT THE RATE OF FOUR OR FIVE A MINUTE

The *Westchester Medical Bulletin,* under the heading "SPEED AND EFFICIENCY Noted Under State Medical Plan," says:

A taste of what medical care may become under governmental auspices is found in a dispatch by the International News Service under an Albany date line on January 20th. This item, published in the *Journal American,* relates to an inspection report, sharply criticizing the existence of a "pill clinic" at the Rikers Island Penitentiary, issued by the State Commission of Correction.

According to the inspection report an inspector for the Commission found that inmates reporting to sick-call clinics on the day of inspection, October 20, 1930, were handled at the rate of four or five a minute.

"Prisoners form two columns," the report said, "and as they pass a table they are given a prescription blank which they take to a physician who sits at a table near the entrance to the examination room of the clinic.

"As the prisoners pass in, they tell him what their ailment appears to be and he, without any examination whatever, writes a prescription, scribbling it so quickly that the nurse who hands out the pills from a tray which he has on a table in front of im could not in a number of instances read the prescription.

"In a few instances, where the inmate's complaints seem to warrant further examination, the doctor directed an examination which was conducted by another physician in the examination room. After the close of the clinic it was found by a count of the prescriptions handed out that one hundred twenty men had passed through within an hour." The inspector added a cryptic comment to the effect that "it appears that such treatment can be of little if any value, as it seems incredible that any physician can diagnose and prescribe at that rate."

NEW COMMITMENT STATUTE FOR ILLINOIS PREPARED BY THE ASSOCIATION OF FORMER PATIENTS

The Executive Committee of Recovery, the Association of Former Patients of the Psychiatric Institute of the Illinois Research and Educational Hospitals, announces the completion of the preliminary draft of a new commitment statute. The statute was prepared with the aid of faculty members of Northwestern University Law School and will be submitted to leading psychiatrists and jurists for criticism and suggestions. After its final revision has been effected, it will be introduced in the next regular session of the Illinois legislature. The main features of the proposed statute are the abolition of court action and the elimination of the "court record." Under the new plan a patient, after proper certification by two physicians, will be admitted to a state hospital without petition, writ, or trial. The hospital staff will be required to make an examination within ten days of admission and to send a report to a State Board of Supervisors composed of physicians, lawyers, and lay people.

The Recovery Association was founded November, 1937, by thirty patients who were discharged from the Psychiatric Institute as recovered. Today it comprises as dues paying members close to one hundred and fifty former patients and upwards of five hundred relatives and friends. The Association publishes the bi-monthly journal, *Lost and Found,* in which the adjustment problems confronting the recovered patient are discussed. Recovery has the endorsement of the University of Illinois, the State Department of Public Welfare, the Illinois Psychiatric Association, and the Illinois Society for Mental Hygiene. Inquiries should be addressed to Recovery, 1819 West Polk Street, Chicago, Illinois.

"THE FOUNDATION PRIZE" OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS. GYNECOLOGISTS AND ABDOMINAL SURGEONS

Rules Governing the Award

(1) "The award, which shall be known as 'The Foundation Prize,' shall consist of $150.00."

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal Surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association, together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5,000 words, and must be typewritten in double-spaceing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis." Submit three copies of thesis and illustrations to Secretary.

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "All manuscripts entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations, shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

For further information, write Jas. R. Bloss, M. D., Secretary, 418 Eleventh Street, Huntington, W. Va.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

National Convention Notice

The 18th Annual Convention of the Woman's Auxiliary to the American Medical Association will be held in New York City, June 10-14, 1940, with headquarters in the Hotel Pennsylvania. In view of the fact that the second edition of the World's Fair will accelerate advance hotel reservations, it is urged that reservations be made immediately through the Housing Bureau which has been set up by the American Medical Association, namely, Dr. Peter Irving, Room 1036, 233 Broadway, New York City.

Mrs. Carlton F. Potter,
Chairman, Arrngements Com.

Mrs. C. W. Stuart,
Press & Publicity Chairman.

County News

It is a real pleasure to announce that two new Auxiliaries have been organized and now take their places as members of our State Society. The greatest asset in achieving the results for which we are striving is that of increasing our membership. Much has been accomplished, more good work is to be done, and as new groups of active workers step forward to share with the many problems, so worthy and of stressing importance. We welcome them, not in the hopes of our load being lighter but in the hopes that our work will be more thoroughly done.

The new organizations and their officers are:

Jefferson-Hamilton County.

President—Mrs. G. M. Parker, Mt. Vernon, Ill.
Vice-Pres.—Mrs. E. Maurice Smith, Mt. Vernon, Ill.
Treasurer—Mrs. C. Dixson, Mt. Vernon, Ill.
Secretary—Mrs. C. J. Anslinger, Mt. Vernon, Ill.
Historian—Mrs. Harry Thompson, Mt. Vernon, Ill.

Madison County.

President—Mrs. C. W. Emons, Alton, Ill.
Vice-Pres.—Mrs. E. W. Wilson, Troy, Ill.
Rec. Secy.—Mrs. E. H. Theis, Granite City, Ill.
Treasurer—Mrs. W. J. Reuter, Bethalto, Ill.
Historian—Mrs. D. M. Roberts, Alton, Ill.

Mrs. C. W. Stuart,
Press and Publicity Chmn.

Public Relations

The public relations program for 1939-1940 was planned to

(1) Create good will for the organization;

(2) Build public opinion which is correctly informed as to its aims;

(3) Produce confidence in the integrity and ability of the organization to fulfill its obligations to the community in which it functions.

To carry out this program, special consideration was given to two objectives:

(a) To acquaint the public with the means of acquiring authentic information on health;

(b) To present the attitude and aims of the American Medical Association on national health issues.

At this time, certain lay organizations are being solicited by officers of the organizations, or by individual members to endorse the Wagner Bill, or some similar measure, and to communicate this action to their respective representatives in Congress. The need for advising careful consideration on all legislation pertaining to health, rather than blanket endorsement, should be emphasized again and again before members of lay organizations during the coming months.

Questionnaires will be sent out, in the near future, to facilitate the work of a public relations survey. The purpose of the survey is to determine the type of public relations work done in each community and the amount of interest shown in the work.

Mrs. Frank Murphy,
State Public Relations Chmn.

Mrs. C. W. Stuart,
State Press and Publicity Chmn.

THE NEW WESLEY MEMORIAL HOSPITAL

The Trustees of Wesley Memorial Hospital have announced that the construction of the new Wesley Memorial Hospital building, the foundations and substructure of which were finished two years ago, will proceed this coming spring. This building has been made possible through the generosity of Mr. George Herbert Jones, a Trustee of Wesley whose gift to the hospital will amount to more than three millions of dollars. It is also the desire of Mr. Jones that labor be benefited in this period of unemployment in the Building Industry.

The erection of this magnificent building on the down town campus of Northwestern University will be a very important addition to the rapidly growing North Side. The Hospital will represent the very last word in hospital design and construction. Much study has been given to the development of the Hospital as a Community Health Center. The new Hospital will retain all of the virtues of the early Nursing Home type of hospital, but will have in addition all of the latest improvements in diagnostic and treatment facilities. It is the purpose of the Donor and the Board of Trustees to make Wesley a Community Center from which will emanate knowledge concerning advances in medical science. Lectures by the Staff Members will be given to professional groups and at regular intervals distinguished speakers from other Hospitals and other cities will assist the Staff in lectures to the Lay Public.

The Hospital will have facilities for the care of charity patients, but there has been a decided effort made by the Hospital Authorities to design the Hospital so that it will offer the finest of care and accommodations to persons of moderate means. It has been felt that the rich and poor have both been better provided for than the so-called white-collar patient.

Wesley Memorial Hospital is affiliated with Northwestern University.

DEPARTMENT OF PUBLIC HEALTH

February 16, 1940.

Illinois Medical Society
30 North Michigan
Chicago, Illinois.
Dear Sir:

Following is a list of newly approved laboratories for publication in your journal:

Approved for Pneumonia Typing

Alexian Brothers Hosp. Laboratory, 1200 Belden Avenue, Chicago.

Columbus Hospital Laboratory, 2548 N. Lakeview Avenue, Chicago.

Henrotin Hospital Laboratory, 939 N. LaSalle Street, Chicago.

The Illyes Laboratory, Gee Building, Lawrenceville.

Ingalls Memorial Hospital, 155th and Page Avenue, Harvey.

McLeansboro Hospital Laboratory, McLeansboro.

Metro Laboratories, 1 N. Pulaski Road, Chicago.

Dr. A. W. Modert, Clinical and X-ray Laboratory, 1001½ Broadway, Mt. Vernon.

St. Bernard's Hospital Laboratory, 6337 Harvard Avenue, Chicago.

St. Elizabeth Hospital Laboratory, 2100 Madison Avenue, Granite City.

St. Francis Hospital Laboratory, 513 Elliott Street, Kewanee.

E. J. Shalgos, M. D., Clinical Laboratory, 1555 W. 79th Street, Room 223, Chicago.

Attached is a list of laboratories approved for premarital tests.

Yours very truly,
H. E. McDaniels, Ph.D.,
Co-ordinating Bacteriologist.

NEWLY APPROVED LABORATORIES

February 16, 1940

**Alexian Brothers Hospital Laboratory, 1200 Belden Avenue, Chicago.

*Dr. Paul Ashley's Laboratory, 24 Illinois Street, Chicago Heights.

*Beverly Clinical Laboratory, 1713 W. 95th Street, Chicago.

*Brokaw Hospital Laboratory, Franklin Avenue, Normal.

*P. V. Dilts, M. D., Office, 101½ E. Washington, Pittsfield.

*Hale Willard Memorial Hospital Laboratory, 604 S. Main Street, Anna.

*Henrotin Hospital Laboratory, 939 N. LaSalle Street, Chicago.

Highland Hospital Laboratory, 1625 S. State Street, Belvidere.

Howard Laboratory, 5 S. Wabash Avenue, Chicago.

*Illinois Soldiers' & Sailors' Children's Hospital, Beech and Lincoln Streets, Normal.

*Laboratory Suite 923, 104 S. Michigan Avenue, Chicago.

Medical Research Laboratories, 25 E. Washington St., Rm. 1308, Chicago.

H. M. Richter, M. D., Laboratory, 6 N. Michigan Avenue, Chicago.

*Dr. Stein's Laboratory, 310 S. Michigan, Chicago.

*Student Health Service Laboratory, U. of C., 950 E. 59th Street, Chicago.

United Air Lines, Medical Dept. Laboratory, 5959 S. Cicero Avenue, Chicago.

**Kahn only.

*Gc only.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS, DETROIT

A Sectional Meeting of the American College of Surgeons will be held in Detroit, Michigan, with headquarters at the Statler Hotel, on April 1, 2 and 3. The states of Michigan, Ohio, Indiana, Illinois and Wisconsin and the province of Ontario will participate.

General outline of the program:

Monday, April 1

7:30-10:00—Registration and general information.

8:30-11:00—Operative and non-operative clinics, general surgery and the surgical specialties, at local hospitals.

10:00-12:30—Hospital conference.

11:30-12:30—Midday panel discussions: abnormal uterine bleeding; cranio-cerebral injuries; delayed union and non-union of fractures; sinusitis.

1:00-2:00—Medical motion pictures, general surgery.

2:00-4:00—Afternoon panel discussions: intestinal obstruction; prevention of postoperative complications; stomach surgery; surgical abdominal complications of pregnancy; blood transfusion and the blood bank.

2:00-5:00—Hospital conference.

2:00-5:00—Medical motion pictures, eye, ear, nose and throat surgery.

4:00-5:00—Medical motion pictures, general surgery.

5:00-5:30—Meeting of Fellows.

5:30-6:00—Meetings: State and Provincial Executive Commissees, Credentials Committees, Judiciary Committees.

7:00-8:00—Medical motion pictures, general surgery.

7:30-8:00—Medical motion pictures, eye, ear, nose and throat surgery.

8:00-10:00—Scientific meeting, general surgery.

8:00-10:00—Hospital conference.

Tuesday, April 2

7:30-10:00—Registration and general information.

8:00-9:30—Breakfast conference for hospital executives.

8:00-11:00—Operative and non-operative clinics, general surgery and the surgical specialties, at local hospitals.

10:00-12:30—Hospital conference.

11:30-12:30—Midday panel discussions; intra-oral cancer; congenital dislocation of the hip; hand injuries; glaucoma.

12:30-2:00—Luncheon, Governors of the College.

1:00-2:00—Medical motion pictures: general surgery, eye, ear, nose and throat surgery.

2:00-4:00—Afternoon panel discussions; arthritis; biliary tract surgery and the bad risk patient; carcinoma of the colon; treatment of infections of the genito-urinary tract; toxemias of pregnancy.

2:00-4:00—Scientific meeting, eye surgery.

2:00-4:00—Scientific meeting, ear, nose and throat surgery.

2:00-4:00—Hospital conference—Demonstrations in local hospitals.

4:00-6:00—Conference on Graduate Training for Surgery.

4:00-6:00—Medical motion pictures; general surgery; eye, ear, nose and throat surgery.

6:30-8:00—Dinner, Fellows of the College, Guests, and others attending.

8:00-10:00—Scientific meeting, general surgery.

8:00-10:00—Scientific meeting, eye surgery.

8:00-10:00—Scientific meeting, ear, nose and throat surgery.

8:00-10:00—Motion pictures for hospital personnel.

Wednesday, April 3

Ann Arbor Day—Transportation from Hotel Statler, Detroit, to University Hospital, Ann Arbor, by bus.

9:30-10:30—University Hospital—clinico-pathological conference on neoplasms.

10:30-11:30—Tumor clinic—University Hospital.

11:30-11:45—Surgical treatment of hypertension—University Hospital.

11:45-12:00—Subdural hematoma—University Hospital.

9:30-12:00—Conference on obstetrics, gynecology, urology—University Hospital.

9:30-12:00—Conference on diseases of thorax and bone—University Hospital.

9:00-12:00—Conference on ophthalmology and oto-rhinolaryngology—University Hospital.

9:30-12:00—Conference on postoperative care and complications—University Hospital.

9:30-12:00—Conference on general surgical and allied subjects—University Hospital.

12:15-1:45—Luncheon—Fellows and Guests—Michigan League Ballroom.

2:00-4:00—Conference on general surgical and allied

subjects—Horace H. Rackham School of Graduate Studies (buses leave for Detroit at 4:00).

Detroit.

8:00-9:30—Hospital conference; breakfast.

10:00-12:00—Group conference—Hospital standardization, administration, and management.

12:30-1:30—Luncheon for hospital representatives.

2:00-4:30—Group conference—Hospital Standardization, administration and management.

7:00-10:00—Medical motion pictures, general surgery.

8:00-10:00—Meeting on health conservation.

* * *

Distinguished surgeons from various parts of the country will address the sessions. Among them will be the president of the College, Dr. George P. Muller of Philadelphia, and the vice-chairman of the Board of Regents, Dr. Arthur W. Allen of Boston.

The 27 approved hospitals of Detroit provide excellent facilities for the series of operative and non-operative clinics in general surgery and the surgical specialties which will be held during the first two days of the meeting. The third day will be "Ann Arbor Day"; buses will leave the hotel in Detroit in the morning for Ann Arbor, and clinics, demonstrations and conferences will be held at the University Hospital there from 9:30 until noon. A luncheon for Fellows and guests will follow at the Michigan League Ball Room. In the afternoon in the main amphitheater of the Horace H. Rackham School of Graduate Studies, a conference will be held on general surgical and allied subjects.

In addition to the clinics and clinical demonstrations and conferences at the hospitals, scientific sessions, conferences and panel discussions will be held at the headquarters hotel. A tentative list of speakers, with their subjects when these have been definitely decided, follows:

Scientific Meetings—General Surgery

George P. Muller, Philadelphia; Roscoe R. Graham, Toronto; Howard K. Gray, Rochester, Minn.; Frank E. Adair, New York; Arthur W. Allen, Boston—"Gall Bladder and Common Duct Surgery. Michael L. Mason, Chicago—"Repair of Cutaneous Contractures of the Hand." Frank H. Lahey, Boston—"Intra and Extra Pleural Diverticula of the Esophagus." Vernon C. David, Chicago—"Polyps of the Large Bowel; Their Pathology and Relationship to Cancer."

Scientific Meeting—Eye Surgery

A. D. Ruedemann, Cleveland; William L. Benedict, Rochester, Minn.; F. Bruce Fralick, Ann Arbor; Samuel J. Meyer, Chicago.

Scientific Meeting—Ear, Nose and Throat Surgery

Louis H. Clerf, Philadelphia; Walter Deam, Louisville; Carl H. McCaskey, Indianapolis; Perry G. Goldsmith, Toronto; Albert C. Furstenberg, Ann Arbor.

Panel Discussions

Abnormal Uterine Bleeding: Leader, Norman F. Miller, Ann Arbor; Collaborators, George Kamperman, Jean P. Pratt and Milton A. Darling of Detroit.

Craniocerebral Injuries: Leader, Harry E. Mock, Chicago; Collaborators, Max Minor Peet, Ann Arbor; Eric Oldberg, Chicago; David Cleveland, Milwaukee; Frederic Schreiber and Albert S. Crawford of Detroit.

Delayed Union and Non-union of Fractures: Leader, Robert H. Kennedy, New York; Collaborators, Fraser B. Gurd, Montreal; John A. Caldwell, Cincinnati; Alfred D. LaFerte, Detroit.

Sinusitis: Leader, Carl H. McCaskey, Indianapolis; Collaborators, Perry G. Goldsmith, Toronto; Albert C. Furstenberg, Ann Arbor; J. Milton Robb, Burt R. Shurly, and H. Lee Simpson of Detroit.

Intestinal Obstruction: Leader, Charles B. Puestow, Chicago; Collaborators, Charles G. Johnston, Detroit; Walter G. Maddock, Ann Arbor; Elmer R. Arn, Dayton; Carl R. Steinke, Akron.

Prevention of Postoperative Complications: Leader, Erwin R. Schmidt, Madison; Collaborators, Edward J. O'Brien, Richard M. McKean, Frank Hartman and Francis J. Murphy of Detroit.

Stomach Surgery: Leader, George P. Muller, Philadelphia; Collaborators, Roscoe R. Graham, Toronto; Roy D. McClure and C. Fremont Vale, Detroit; Henry K. Ransom, Ann Arbor.

Surgical Abdominal Complications of Pregnancy: Leader, Arthur H. Bill, Cleveland; Collaborators, Ward F. Seeley, Detroit; Henry F. Beckman, Indianapolis; Harold A. Furlong, Pontiac; Norman R. Kretzschmar, Ann Arbor.

Blood Transfusion and the Blood Bank: Leader, Raymond W. McNealy, Chicago; Collaborators, John Scudder, New York; Osborne A. Brines and Warren B. Cooksey, Detroit.

Intra-oral Cancer: Leader, Frank E. Adair, New York; Collaborators, Willis D. Gatch, Indianapolis; Rollin H. Stevens, Arthur B. McGraw, and Harry C. Saltzstein of Detroit.

Congenital Dislocation of the Hip: Leader, Joseph A. Freiberg, Cincinnati; Collaborators, Frederick C. Kidner, Detroit; George A. Ramsay, London, Ont.

Hand Injuries: Leader, Michael L. Mason, Chicago; Collaborators, James M. Winfield, Detroit; George E. Wilson, Toronto.

Glaucoma: Leader, William L. Benedict, Rochester, Minn.; Collaborators, A. D. Ruedemann, Cleveland; Don M. Campbell, Detroit; Francis B. Fralick, Ann Arbor.

Arthritis: Leader, Carl E. Badgley, Ann Arbor; Collaborators, Russell L. Haden, Cleveland; Philip H. Kreuscher, Chicago; Herman C. Schumm, Milwaukee.

Biliary Tract Surgery and the Bad Risk Patient: Leader, Arthur W. Allen, Boston; Collaborators, Robert S. Dinsmore, Cleveland; Henry J. Vanden Berg, Grand Rapids; Clark D. Brooks, Detroit; Charles B. Puestow, Chicago.

Carcinoma of the Colon: Leader, Frank H. Lahey, Boston; Collaborators, Thomas E. Jones, Cleveland; Vernon C. David, Chicago; Louis J. Hirschman, Detroit.

Treatment of Infections of the Genito-urinary Tract: Leader, Herman L. Kretschmer, Chicago; Collaborators, Charles C. Higgins, Cleveland; Homer G. Hamer, Indianapolis; Reed M. Nesbit, Ann Arbor;

Harry W. Plaggemeyer and Frederick H. Cole, Detroit.

Toxemias of Pregnancy: Leader, Roland S. Cron, Milwaukee; Collaborators, James H. Bloomfield, Chicago; Archibald D. Campbell, Montreal; Harold Henderson, Detroit; Walter Brand, Toledo.

Hospital conferences will also be held throughout the three days of the meeting. These will cover a wide variety of subjects of interest to hospital personnel. There will be formal meetings, round table and panel discussions, a special program of medical motion pictures on hospital topics, and special demonstrations of procedures in the local hospitals. Two breakfast conferences will be held for hospital representatives on Tuesday and Wednesday mornings which will present exceptional opportunity for informal discussion of hospital problems.

At the headquarters hotel there will be educational and scientific exhibits and showing of motion pictures portraying surgical and hospital procedures. Daily bulletins will be issued listing the various sessions, conferences, clinics and other events of each day.

The meeting will close with a session in the Masonic Temple, open to the public, on the subject of "Conservation of Health."

The medical profession at large, as well as hospital trustees, superintendents, pathologists, dietitians and other hospital executive personnel, will find much to interest them in the varied program at this meeting. Members of the State Medical Association are most cordially invited to attend. There will be no registration charge.

Illinois State Executive Committee:
Carl D. Black, M. D., Chairman;
Michael L. Mason, M. D., Secretary;
John A. Green, M. D., Counselor;
James S. Mason, M. D., Counselor.

MEETING OF IOWA AND ILLINOIS CENTRAL DISTRICT MEDICAL ASSOCIATION

The quarterly spring meeting of the Iowa and Illinois Central District Medical Association will be held Thursday, March 28, at the New Harper House in Rock Island, Illinois.

A short paper will be delivered by Dr. S. P. Durr of Rock Island on "Difficulties in the Diagnosis of Empyema."

Dr. Charles R. Austrian, associate professor of medicine at the Johns Hopkins University School of Medicine, will deliver an address on "The Diagnosis and Treatment of Some Chronic Non-Tuberculous Pulmonary Infections."

A dinner will be served at 6:30 P. M., preceding the meeting.

James Dunn, M. D., Secretary.

RED CROSS TO ENROLL MEDICAL TECHNOLOGISTS FOR MILITARY RESERVE

The American Red Cross announces that at the request of the Surgeon General of the Army and in compliance with its policy of cooperation with both the Army and Navy, the Red Cross, as an expansion of its peace-time service for the military forces, has undertaken the enrollment of various types of medical technologists who are willing to serve in the medical departments of the Army and Navy if and when their services are required at the time of a national emergency.

The plan has been under consideration for almost a year, Chairman Davis said, and has no relation to the present war situation in Europe.

The enrollment now being inaugurated will be similar to that of the nurses' reserve which the Red Cross has maintained for the Army and Navy since 1911, and which is now being expanded to include properly qualified male nurses, and also the reserve of dietitians which has been maintained since 1917.

Persons with the following qualifications will be included:

Chemical Laboratory Technicians (male).
Dental Hygienists (male and female).
Dental Mechanics (male).
Dietitians (male and female).
Laboratory Technicians (male and female).
Meat and Dairy Hygienists (Inspectors) (male).
*Nurses (male).
Occupational Therapy Aides (male and female).
Orthopedic Mechanics (male).
Pharmacists (male and female).
Physical Therapy Technicians (Aides) (male and female).
Statistical Clerks (male and female).
X-Ray Technicians (male and female).

The Red Cross will work through the various associations and agencies of which these technologists are members, giving to them the details of the plan, including requirements prescribed for enrollment.

In the event of national emergency, the enrolled male technologists who meet the required physical standards will be eligible for enlistment in the Army as non-commissioned officers and in the Naval Reserve as petty officers. Women technologists and men who do not qualify physically will be eligible for employment by the Army as civilians. Women technologists are not eligible for service in the Navy.

The Navy has indicated that notwithstanding the enrollment with the Red Cross of male technologists eligible for enlistment in the Naval Reserve in emergency, it is desired that in peace-time qualified personnel actually enlist in the U. S. Naval Reserve. The Navy does not require dietitians, occupational therapy aides, orthopedic mechanics or meat and dairy hygienists (inspectors), but all other technologists who may be interested in enlistment in the Naval Reserve are encouraged to communicate with their Naval District Commandant, from whom they may obtain full information.

Medical technologists belonging to the groups listed above who are interested are urged to write National Headquarters, American Red Cross, Washington, D. C., for full information.

*This group will not be members of the Army or Navy Nurse Corps, which under basic law is limited to females, but will be used as technologists for service auxiliary thereto.

Original Articles

PERFORATIONS OF THE GASTRO-INTESTINAL TRACT

GATEWOOD, M. D.

CHICAGO

The greater frequency of perforations of the gastro-intestinal tract today is due largely to the greater use of high speed machinery, especially the automobile, and partly to the increase in frequency of peptic ulcer, amebiasis and regional enteritis.

The etiologies naturally fall into two large groups: the traumatic and the inflammatory, plus the more uncommon third group secondary to neoplasms. Traumatic perforations are the result of (a) percutaneous or penetrating wounds, such as gun-shot and stab wounds, and (b) subcutaneous, in which there may be no evidence of injury to the abdominal wall. In civil life percutaneous wounds are not very common. The diagnosis is usually self-evident and, based on the experiences of the more recent wars, including the one in which we undertook to help make the world safe for democracy, the therapy is fairly well standardized. Owing to the lack of symptoms in some instances, and the infrequency with which the lesion is encountered in many communities, the physician may occasionally be misled and treat a penetrating wound of the gastro-intestinal tract as a superficial lesion. While many stab wounds are superficial and do not appear to enter the peritoneal cavity, exploration is much the safest therapeutic procedure. When the operation proves to be purely exploratory, no great harm has been done and frequently a life has been saved. Gun-shot wounds of the abdomen in civil life, should carry even a lower mortality than similar wounds in the injured soldier because proper facilities for therapy in most instances are readily available. As pointed out by Richards[1] in discussing the selection of emergency abdominal cases for operation, a high proportion of those patients who survive an operation performed in the first twelve hours will go on to recovery. The mortality mounts rapidly in the second twelve-hour period and after that time most patients who survive the operation are those whose injuries were not originally fatal. The importance of an early diagnosis and early operation are well seen in the large series reported by Siegel[2] who found that of those operated upon within the first four hours, 85 per cent. recovered; after twelve hours, only 30 per cent. recovered. The decision as to whether a man wounded in the abdomen should be operated upon immediately or not is usually based on the time which has elapsed since the injury and the rate and character of the pulse. Patients with a pulse of 120 or over have less than half the chance of survival of men with a slower pulse. A recently wounded patient with a rapid pulse should be transfused at once and operated upon provided there is any reasonable prospect of his surviving the actual operation. Hemorrhage from injury to the mesentery or from some solid viscus must be controlled before making the necessary repair of a ruptured viscus.

The subcutaneous perforations are produced by direct force, as by some blunt object being applied forcibly to the abdominal wall, or rarely by indirect force, as by lifting or straining. In this group both diagnosis and treatment are often exceedingly difficult. Rupture of the bowel may occur (fig. 1): (1) by *crushing,* i.e., the intestine is caught between some fixed object as the spine and the direct force applied perpendicularly to the abdominal wall; (2) by *tearing,* i.e., the force is applied tangentially to the abdominal wall, causing the bowel to be torn from its attachments and often tearing the mesentery also; and (3) by *bursting,* i.e., increased intra-intestinal pressure is exerted by fluid or gas trapped in a loop of bowel between points of angulation. For example, a man working at a band saw is struck in the right lower quadrant with a small piece of wood measuring 10 by 3 by ¾ inches in thickness. He doubles up with pain but soon recovers from the primary shock and goes on with his work for perhaps an hour, when he begins to have severe abdominal distress and two hours after the accident is brought to the hospital. On examination there is no evidence of injury, no bruise or scratch. The abdominal wall, however, is boardlike, the patient's skin is clammy and his pulse is rapid. He is in great distress. Vomiting may or may not be present. His leucocyte count is apt to be 16,000,

*Deceased, May 22, 1939.

Read before the Illinois State Medical Society, Rockford, Illinois, May 3, 1939. Joint Meeting of Sections on Surgery, Medicine, Radiology.

but may not be elevated at all. X-rays taken in the erect posture may or may not show extra-visceral air in the abdominal cavity. Without x-ray evidence and without leucocytosis, one may be tempted to temporize, looking for more definite symptoms, but by so doing he is wasting the unfortunate victim's chances of recovery. Such a patient will go into profound shock and when an emergency operation is finally performed, the abdomen will be found filled with liquid feces, the contents of the cecum still escaping from a lacerated wound. Autopsy performed the following day will reveal the fact that no walling off has occurred. The mechanism in rupture of this sort is fairly typical. The muscles of the abdominal wall are caught off guard, the cecum happens to be filled with gas, and the force explodes it like a toy balloon. In such wounds, the perforation may be small and spontaneous closure may occur. Whether the opening in a perforated viscus is sealed by omentum or fibrin, depends largely upon the size of the hole, but to a considerable degree on the virulence of the infection and the resistance of the patient. It is well known that the fasting stomach is almost sterile and that the number and virulence of bacteria increase from the stomach to the anus. This accounts for the extremely high mortality in the series of compressed air accidents which occurred a few years ago, when a playful workman would point the air nozzle at the rear of a fellow-workman, little realizing that the force would be transmitted through a foot or more of air, through the clothing and into the rectum. Rupture of the sigmoid by this means was by no means rare and even with prompt operation, the mortality was almost 100 per cent.

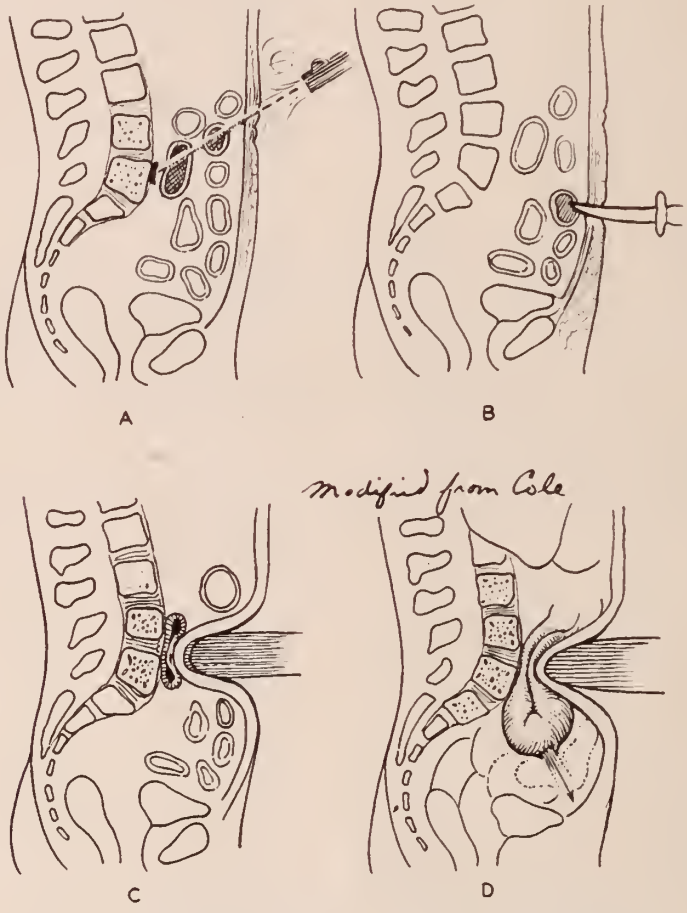


Fig. 1. Mechanism of perforation of the gastro-intestinal tract by (a) gun shot; (b) knife stab; (c) and (d) blunt forces.

Perforations produced by crushing are frequently seen in children who have been run

over by automobiles or wagons, in truck-helpers caught between a loading platform and the tail-gate of a truck, and in individuals caught beneath a heavy rigid object.

Injuries of the tearing variety have frequently occurred in football players, the retro-peritoneal duodenum or the upper jejunum at times being completely torn across. Aird[3] has recently collected an interesting series of cases in which ruptures of the intestine occurred as a complication of ill-advised attempts to reduce incarcerated inguinal herniae. He also reported a collected series of thirty-three cases in which rupture occurred after sudden muscular strain. The theories of etiology are somewhat ingenious, one being that the sudden muscular contraction increases intra-abdominal pressure sufficiently to blow a hole in that portion of the gut that appears directly over the hernial opening. Another explanation is that a loop of bowel, fixed at the ligament of Treitz on the one end and gripped in a hernial orifice at the other, may be over-stretched. In support of this explanation, I have seen one such patient, following a sudden severe effort to prevent a heavy box from falling, develop a perforation in the jejunum close to the ligament of Treitz.

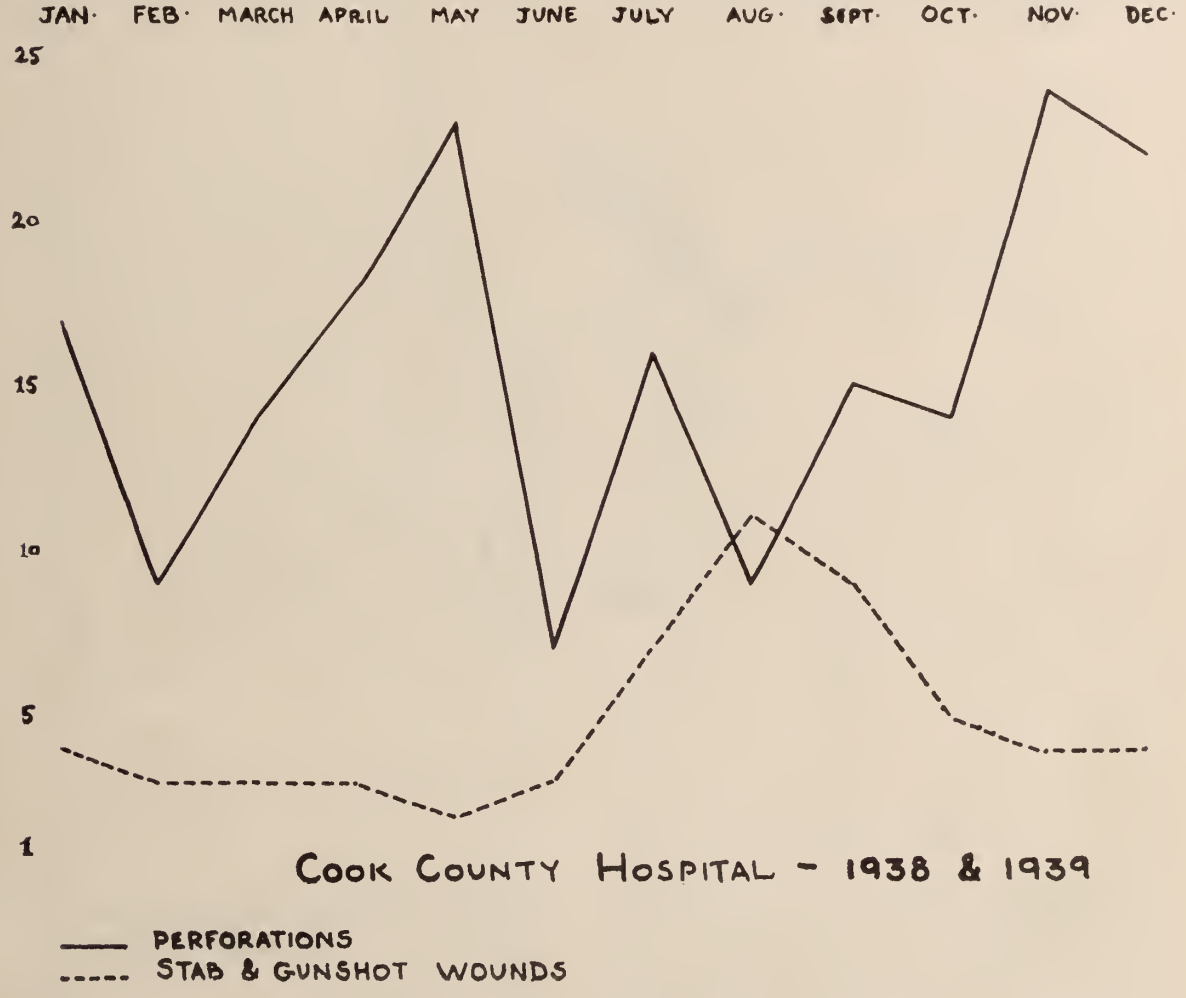


Fig. 2. Graph represents 236 patients with acute perforations of the gastro-intestinal tract. Note seasonal rises.

Inflammatory perforations of the gastro-intestinal tract are much more frequent in civil life than are the traumatic. Excluding appendicitis, during the past year at Cook County Hospital, 236 patients with acute perforations were operated upon (fig. 2). Of these, 170 were for perforation of the stomach and duodenum, and 55 were performed for gun-shot and stab wounds. It is interesting to note that the peaks for ulcer perforation came in May and November (following recurrences in the spring

and fall). On the other hand, the dog days of August agitated the greatest number of assailants to resort to the use of lethal weapons.

The etiology of inflammatory perforations naturally depends upon the primary inflammation (fig. 3). The most common source is the acutely inflamed or gangrenous appendix. However, the time limits of this paper prevent its discussion. Second in point of frequency comes the perforated ulcer, followed by a variety of other diseases, such as regional enteritis, tuberculous and typhoid ulcers of the ileum, inflammation of Meckel's diverticulum and diverticulitis of the colon, amebiasis and ulcerative colitis, to mention only the most common. Perforations from carcinoma of the gastro-intestinal tract are prone to occur slowly and to produce walled abscesses, and rarely perforate into the free peritoneal cavity to produce generalized peritonitis. As carcinomatous perforations are similar to inflammatory perforations in most respects, they may be considered together.

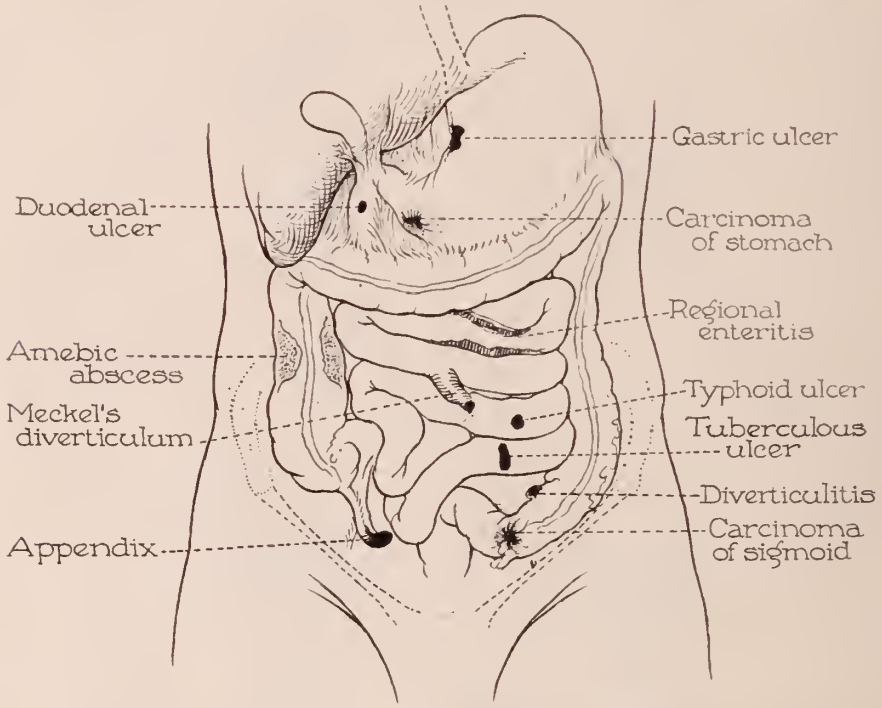


Fig. 3. Primary etiological factors and locations of inflammatory perforations of the gastro-intestinal tract.

Preoperative diagnosis in inflammatory perforations should be made in the majority of cases, if attention is paid to the history and the physical findings. There are two groups, however, in which the diagnosis may be difficult: 1. Those patients from whom a good history is unobtainable, as e. g., in these days of extensive travel, typhoid and amebic perforations must be kept in mind even when there is no typical history. 2. Those patients who have either very small or very slow perforations. In such a patient, walling off occurs almost at once as in the appendiceal abscess or the *forme fruste* ulcer. Although occasionally such a walled off abscess may secondarily perforate into the free abdominal cavity, conservative management is usually rewarded by the satisfactory recovery of the patient, while well-meaning but misguided exploration is prone to initiate wide-spread peritonitis. In the doubtful case where perforation probably has occurred twenty-four to forty-eight hours earlier, surgical judgment is difficult. Although conservatism usually pays, where there is no evidence of walling off, closure of the perforation is the only therapy which offers the patient any hope.

The typical clinical picture of an acute perforation of a peptic ulcer needs no repetition. There is an undoubted increase of this type of perforation in the large urban centers. The

incidence in a series of 729 cases of peptic ulcer recently reviewed by Eliason and Ebeling,[4] was slightly over ten per cent. Sudden physical effort and distention of the affected viscus by food or gas are factors in causing sudden rupture of perforating ulcers. Singer collected thirty-eight cases in which acute perforation followed soon after fluoroscopy. In a series of 500 cases, Thompson[6] calls attention to the high percentage of perforations occurring while the patient was doing some active physical exercise. Unfortunately, not all patients have the history of acute onset of severe pain, nausea, vomiting and collapse, followed by shock and board-like rigidity of the abdominal wall. In some instances, the patient seems to be swamped from the beginning. There may be little muscle defence, leucopenia rather than leucocytosis, profound prostration and death within twenty-four hours. I have seen such a case mistaken for coronary thrombosis and the diagnosis made only at autopsy. In about 30 per cent. of cases, no history suggestive of ulcer is obtainable. More frequently, the story is suggestive of an acute ulcer of only a few weeks' duration. While such conditions as acute cholecystitis acute or hemorrhagic pancreatitis, gastric crises, diaphragmatic pleurisy and coronary thrombosis are to be considered, there is no condition which gives such a board-like abdomen and such severe pain as is encountered in the typical case. Extravisceral air demonstrated either by physical findings or by x-ray is a most important diagnostic sign, but its absence should not deter one from making the diagnosis. Confronted with a mortality well under ten per cent. in the first ten hours but which increases hourly, prompt diagnosis and immediate surgical therapy are most necessary.

The treatment must vary with the condition encountered at the operating table. In general, the simplest and the least time-consuming operation is the one of choice. While Yudin and some of the Russian surgeons are advocating gastric resection in the face of frank perforation, most American surgeons are performing either a simple closure with an omental tab, as suggested by Roscoe Graham, or an excision of the ulcer with some type of pyloroplasty as the Finney or the Judd. After closing the perforation by one of these methods, as much of the gastric contents as possible should be removed from the peritoneal cavity with a Poole aspirator. Gross particles, if present, should be carefully mopped up and the wound closed without drainage. While walled off abscesses occasionally form (perforated peptic ulcer is the second most common cause of subphrenic abscess), it is better to drain them later if the occasion arises than to fool one's self into believing that he is preventing their formation by inserting pieces of tubing in places where they may do much more harm than good.

While there is no pathognomonic sign of acute intestinal rupture, the diagnosis can usually be made from the clinical picture, if a good history is obtainable. Pain is the outstanding symptom. It is not colicky in character but rather aching, persistent and poorly localized. In case of injury, shock may follow immediately or it may be delayed. I have seen a patient with a ruptured jejunum walk into the hospital in good condition and go into severe shock four or five hours after the accident. Inflammations with perforation may have some prodromal symptoms as is common in acute appendicitis and sometimes seen in perforated ulcer. On the other hand, the onset may be just as abrupt as in any traumatic perforation. Nausea and vomiting are the rule, and continued vomiting after recovery from the initial shock is a valuable early sign. Rigidity of the abdominal muscles is a most valuable sign. It is usually present early and is persistent even under the influence of morphine. Distention of the abdomen rarely occurs until peritonitis develops and offers an extremely grave prognosis when seen early. Obliteration of hepatic dullness is seldom found in the early stages, and air in the peritoneal cavity is not demonstrable in anything like the percentage of cases in which it can be shown when a peptic ulcer has perforated.

The surgical therapy at times tries the ingenuity of the most experienced surgeon. In general, the operation should not be prolonged. That procedure which will close *all* perforations most quickly and with the least amount of shock, is the one which should be chosen. The question of exteriorization, of resection or of enterostomy must be decided upon at the operating table.

The postoperative care is largely that of acute peritonitis. Adequate use of morphine, the prevention of distention with a Wangensteen type

of decompression apparatus, and an understanding of the importance of fluid balance will save many patients who, a few years ago, were doomed.

SUMMARY

1. Perforations of the gastro-intestinal tract are either traumatic, inflammatory or neoplastic in origin.

2. The clinical picture of some of the commonest types has been discussed.

3. Early diagnosis and prompt surgical therapy can reduce the mortality materially.

4. The treatment should be as simple and rapid as is consistent with accurate closure.

5. Good postoperative care, including the intelligent treatment of ileus, has contributed much to the reduction of mortality in perforation of the gastro-intestinal tract.

6. The mortality rate is in direct ratio to the distance of the perforation from the cardia and the time allowed to elapse before repair of the perforation is made.

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FRACTURES ABOUT THE ELBOW JOINT

R. J. Mroz, M. D.

ROCKFORD

Fractures about the elbow joint are seen at sometime or other by all of us. It is not the purpose of this paper to place before the profession anything new, or to cover the entire field of fractures in this region, but to treat briefly the problems confronting a physician in this type of injury, and to comment on the recognized methods of treatment.

These fractures so often are the source of much worry to the physician because of the frequent involvement of the joint, and the resulting limited motion, either temporary or permanent. There is always present the possibility of some complication. It seems to me that this is one of the most important injuries that the general practitioner has to deal with, and one that can give him most concern. It is, therefore, expedient that he be familiar with the normal appearance of the region as seen by examination and x-ray, so that he can recognize any change that has taken place. Probably it is not necessary to mention that a good examination be made of the injured elbow before reduction, but I cannot stress enough the importance of a brief neurological examination of the arm before manipulation. This is not hard to do, and should be done in any fairly severe injury to the elbow joint in order to check the presence or absence of radial or ulnar nerve injury. These injuries are occasionally seen and, if not noticed before manipulation, may later cause the treating physician some embarrassment, or even a law suit.

In reviewing briefly the anatomy of the elbow, there are normally three prominent anatomical landmarks; that is, the medial and lateral condyles of the humerus, and the tip of the olecranon. When the elbow is in full extension, these points are in a horizontal plane. As the elbow is flexed, the point of the olecranon moves distally, so that at 90° flexion a triangle is formed by these points with the base of the triangle formed by the two prominent condyles. Another anatomical feature is the carrying angle of the elbow. With the arm hanging down along the side of the body, the forearm deviates outward at the elbow at an angle varying slightly with the individual; therefore, the injured arm should be compared with the normal after manipulation. Injury in the region of the elbow joint may alter this angle, so in reducing a fracture there, great care must be taken that the usual landmarks are restored as nearly as possible to their normal positions. The joint itself is complicated in that all three bones, humerus, radius, and ulna, are an integral part of the joint. The ulna articulates over the distal and of the humerus in a hinge-like fashion; the head of the radius glides over the lateral portion of the humerus when the elbow is flexed or extended, and rotates over this same portion as the forearm is pronated and supinated.

In treating fractures about the elbow, one must be familiar with the x-ray landmarks as well as the anatomical landmarks of this region, if an intelligent diagnosis and approach to treat-

Read before Section on Surgery, Rockford, May 2, 1939.

ment is to be made. It is essential, especially in children, that one be familiar with the development, and later the union of the various epiphyses, because of the possibility of confusing the normal with injury or displacement.

It is well to remember that at two years of age, in an x-ray, there has not yet appeared any center of ossification of any of the epiphyses, except the capitellum, which appears at about twelve to eighteen months. By the time the child is four and one-half years of age, besides the capitellum, one sees the center for an internal epicondyle and the head of the radius. At about nine years the center for the trochlea appears. By about eleven years the center for the olecranon becomes visible. This is often mistaken for a fracture of the olecranon. At about twelve the center for the external epicondyle appears. By now, the trochlea and capitellum have united. At about this age, too, the appearance of the external epicondyle may easily be mistaken for an epiphysial separation. By fifteen to seventeen years, all epiphyses have united, often earlier in girls than in boys.

The elbow injury itself may be caused by falling on the outstretched arm, by falling directly on the elbow, or by direct violence. Although most elbow injuries are due to a fall, the automobile accident is a large factor now in producing injuries about the elbow joint, especially in the adult.

Fractures about this joint are usually accompanied by a considerable amount of swelling. This may come on immediately, or may be delayed several hours, depending on the amount of injury to the soft tissues, and the amount of displacement of the fragments. The swelling is often accompanied by blisters of the skin, especially if reduction is not done early. At times, if swelling is due to internal hemorrhage, it may be necessary to aspirate the mass, especially if this embarrasses the circulation to the forearm. The best way to avoid excessive swelling, though, is to do a reduction of the fracture as soon as possible. This not only controls swelling, but is easier to do early than hours later. It is not advisable to wait with reduction until swelling subsides, because by that time there has been considerable organization of any internal hemorrhage, and the contused tissues have become somewhat hardened and, therefore, not as pliable as they were at first.

Reduction then, should be done at once, and preferably under general anesthesia, although in picked cases, intravenous anesthesia may be used, especially in adults.

Although fractures about the elbow joint may be classified in detail according to the anatomical portions of the bones involved, I shall use only the following gross classification for the purpose of this paper:

I. Fractures distal end humerus
   A. Supracondylar
   B. Fracture of internal condyle
   C. Fracture of external condyle
   D. T fracture
II. Fracture head of radius
III. Fracture olecranon.

The supracondylar fracture is probably the most common of elbow injuries. It is seen usually in children, although it may occur in the adult as well. These fractures in the adult, though, are more difficult to reduce, and to keep reduced than in the child. The period of immobilization is also longer. The distal fragment is usually displaced posteriorally, often taking with it a long strip of periosteum from the posterior surface of the humerus. Swelling takes place almost immediately, and the upper arm appears thicker and shorter than normal.

To reduce a supercondylar fracture by manipulation, the patient should be anesthetized. Any anesthetic may be used that will insure good muscular relaxation, although I prefer to use ether anesthesia in most of the cases. Using counter-traction by passing a folded sheet under the patient's axilla, the operator applies traction on the forearm with one hand, the other hand grasping the elbow along the dorsal surface. The arm is hyperextended, slightly increasing the deformity while at the same time the fragments are manipulated into as good position as it is possible. The forearm is then flexed on the arm to an angle of about 70° to 75°. I do not say acuate flexion, purposely, because in flexing the forearm acutely on the arm, it is very easy to impair the circulation of the forearm, especially if any more swelling is to take place after reduction.

Usually after this manipulation, the reduction will be complete. It has been found that flexion is the best position for immobilization of these fractures because the fragments are retained in position by the triceps muscle which

acts, to a certain extent, as a posterior splint. Flexion is also the best position for optimum function, if the joint should get stiff later, or if myositis ossificans occurs.

The elbow is then immobilized. In the simple fracture when only slight displacement of fragments is present, and the fragments apparently stay in position after reduction, I prefer the use of strips of adhesive about two inches wide to hold the elbow in about 75° of flexion, as the only means of immobilization. This adhesive is not put on tightly, and does not completely encircle the arm or forearm. A posterior molded plaster splint is used in the more complicated case, and especially in adults. After immobilization is applied, an x-ray should be taken to check on the reduction, and as a matter of record. Both an A-P and lateral are taken; the A-P view is taken directly through the bones of the forearm. The immobilization is retained for a period of about two to three weeks, when it is removed and gentle active and passive motion is started. The support is then reapplied after the treatment. Some form of support is worn from two to three more weeks, being removed for physiotherapy, the forearm gradually being brought down from the flexed position. Motion must be started early if one is to avoid prolonged stiffness. Naturally, the physician must use his judgment, for exceptions may arise.

Ordinary manipulation under anesthesia may be unsuccessful, whether it be due to too much swelling, or severe comminution of the fragments. At times, the fracture is oblique, and even if reduction is obtained, the fragments will not remain in position.

If one recalls the shape of the distal end of the humerus just above the condyles, it will be seen that the bone in the region of the trochlea is quite thin. If the fracture happens to involve this portion, it will be seen that there is not much surface to be approximated. Any surgeon who has opened any of these fractures, will also know of the difficulties encountered, especially in keeping the fragments in position after reduction. Open surgical reduction is not, therefore, often resorted to in these injuries. In badly comminuted and compound fractures of the elbow, skeletal traction is undoubtedly the best method at our disposal to get a good reduction. Skeletal traction can be easily applied, and forms an efficient method of treatment, particularly in comminuted fractures of the distal end of the humerus. It is especially indicated if the fragments will not remain in position after reduction. In children, general anesthesia should be used, but local anesthesia may be used in adults.

The traction is applied by inserting a Kirschner wire through the proximal end of the ulna just anterior to the joint. Five to six pounds weight is usually sufficient to maintain enough traction to get the fragments in alignment. The amount of weight used, however, is dependent on the amount of displacement, and whether the patient is a child or adult, the adult usually requiring slightly more than the child. This traction is maintained for about two to three weeks, or until check by x-ray reveals that sufficient callous has formed to hold the fragments in position. Then, it is necessary to follow this by immobilization in a cast for about ten days to two weeks. At the end of this time, the cast is bivalved and guarded active and passive motion started. In the child, the immobilization period is less than in the adult.

Prognosis is usually good in simple and uncomplicated supracondylar fractures. It is also good, if the reduction was complete, and if it was maintained. The prognosis is usually better in children than in adults. Limitation of motion may be present to a certain degree for several weeks, but with adequate treatment, this can usually be corrected.

Fracture of the inner or outer condyle of the humerus is another common injury of the elbow joint. The outer condyle is more frequently fractured than the medial, probably because of the direct impact of the head of the radius against the condyle when falling on the outstretched arm. If displacement of the fragments has not occurred, or is very slight, immobilization may be all that will be necessary for about three weeks with the elbow at about 90°. Gentle active and passive movements are then started, and the elbow gradually brought down. After about five weeks the arm may be held in a sling, but no carrying of weights is allowed until the fragments are well united. When considerable displacement of the fragments occur during the injury, it is usually difficult, and often impossible, to reduce the fracture by manipulation. If the fragments can be replaced by manipulation

they often slip easily, and reduction cannot be maintained. In such cases it is best, in my opinion, to do an open reduction and attach the fragments to the humerus by a beef-bone screw or a metal nail. The elbow is then immobilized by an anterior and posterior molded plaster splint, or even a circular cast, extending from the metacarpophalangeal joints to the axilla, with the elbow at 90°. At the end of two to three weeks, the cast may be removed for physiotherapy in the form of heat, massage and guarded active and passive motion. All immobilization may be removed at about five weeks, but normal use of the joint is not allowed until the fragments are shown by x-ray to be well united.

If the fragments in this type of fracture are not approximated, and are not held in position until union is obtained, the usual end-result is a non-union. Non-union of a fractured condyle of the humerus may result later in complications, such as deformity and palsy, especially of the ulnar nerve. Surprisingly, though, disability is not usually great from the deformity alone or the non-union.

Fracture of the head of the radius is another injury of considerable importance in the region of the elbow. Fractures of this type are difficult to reduce, and even if reduction is obtained, may result in considerable disability in the elbow joint because of the complicated nature of the joint. It must be remembered that the head of the radius glides along the external condyle of the humerus in flexion and extension, and rotates over this same surface as the forearm pronates and supinates. Any malposition or enlargement in this region by callus will disturb the normal range of motion in the joint. It is, therefore, advisable in most instances of fracture of the head of the radius, especially if any degree of comminution or displacement occurs, to resort to surgery and remove the head of the bone. This is usually not a formidable procedure, the disability is short, and usually a good functional joint results. The operation is not without danger, however, as the radial nerve passes over the radius from the dorsal to the ventral surface of the arm, just distal to the head of the radius. It is important, therefore, to identify this nerve and retract it during the operation so as not to injure it.

If the fracture is a simple one, with no comminution and no displacement of the fragments, it is probably best to wait and see, after a short period of immobilization, whether there will be any disability. One can always remove the head later if disability results.

Fracture of the olecranon is of rather frequent occurrence, and is usually seen following direct trauma to the elbow region. If no separation of fragments has taken place, immobilization for about three to four weeks with the elbow in extension may be all that will be necessary. If displacement of the fragments is present, then, under general anesthesia, the elbow is fully extended and the fragments manipulated into position. This failing, an open reduction will be necessary. The fragments are then held together by a metal screw or nail, or beef-bone screw. Kangaroo tendon or chromic catgut may be used, depending on what the surgeon is best capable of using. Immobilization is then maintained by means of a plaster cast extending from the metacarpophalangeal joints to the axilla, with the elbow in full extension for about three to four weeks when the cast is bivalved and heat and guarded active and passive motion is started.

Preexisting conditions in the joint may alter the method of treatment of fractures of the elbow. For example, a previous injury, or arthritis, may have caused some changes in the joint so that a supracondylar type of fracture could not be treated by the customary flexion of the elbow. I have in mind an adult where a previous arthritis had caused a limitation of motion there. The fracture was reduced and the elbow was flexed in the usual manner. An x-ray after reduction revealed that the fracture surface of the distal fragment was now facing posteriorally. On further manipulation it was found that the fragments stayed in good position only if the elbow was held in about 100° of flexion. I found later that, previous to the accident, the patient was unable to flex the elbow beyond this point. This illustrates the necessity of getting a history of the patient's previous ability to use the affected extremity, and the advisability of the physician to use his judgment in each individual case as to the method of treatment, and the type and position of immobilization of the extremity.

There are several complications of elbow injuries that should be considered. One of the most serious complications is a Volkmann's

ischemic contracture. This complication is familiar to every one who has treated fractures about the elbow joint, and is a serious one. It may occur from intrinsic, as well as extrinsic causes, although the common belief, especially of the layman, is that it is due to tight bandages. Because of the possibility of this conclusion, it is well to avoid any complete encirclement of the forearm or arm tightly with adhesive or bandage. It is necessary also to inspect the arm about twelve hours after manipulation, and again about twelve hours after that. If there is any unusual swelling or discoloration of the hand, the bandage must be loosened and the position of the elbow adjusted so as to allow better circulation. As I mentioned previously, this complication can occur in cases where no external bandage is used, but where an excessive amount of swelling is present.

A complication seen occasionally in supracondylar fractures is a radial nerve injury. This is manifested by an inability to dorsi-flex the hand, therefore, it is well in examining the patient before reduction to always test the ability or inability to do this. Such a simple procedure may prevent considerable embarrassment later, or even a law suit. If injury to the nerve is present, it is then necessary to keep the hand in a cock-up splint of metal or molded plaster until the paralysis disappears. This may take from four to nine months, depending on the extent of the injury to the radial nerve. Unless the nerve was severed one can usually expect complete recovery.

Another complication often seen in fractures involving the elbow joint is a dislocation of the head of the radius, which can be diagnosed by x-ray and manual examination. If dislocation is not reduced at the time of the reduction of the fracture, it may cause considerable disability. This dislocation is hard to reduce after the torn capsule has healed.

Myositis ossificans is an occasional complication that should be mentioned and consists of the calcification of the muscles about the joint, with often a permanent disability as a result.

Excessive hemorrhage into the joint may necessitate aspiration, because the intrinsic pressure caused by it may be sufficient to bring about an ischemia of the forearm muscles and result in an ischemic contracture.

SUMMARY

Fractures of the elbow joint may involve the distal end of the humerus, olecranon or head of the radius.

In order to treat such an injury intelligently, it is desirable to be familiar with the anatomical landmarks of the joint and the normal x-ray appearance at various ages.

The essentials of treatment of these injuries are early reduction, early motion and adequate physiotherapy.

There are a few possible complications that should be guarded against at all times.

CASE HISTORIES

A. M.—A ten-year-old girl was seen April 14, 1935, about 24 hours after falling from a pony and injuring her left elbow. Examination showed a great deal of swelling present about the left elbow. This was very tense and a large bleb had formed in the cubital space. A wrist drop was present, patient being unable to dersiflex the hand. X-rays show a supracondylar fracture with considerable displacement of fragments.

The elbow was manipulated under ether anesthesia, and was immobilized with adhesive strips. An x-ray was then taken and showed the fragments in good position. The arm was then bandaged to the trunk with a splint holding the wrist in a slightly cocked-up position.

On April 28, two weeks later, guarded active and passive motions of the elbow were started.

Patient wore the cock-up splint until October 7, 1935, when it was found that the radial palsy had disappeared and the patient had normal use of her hand. Motions in the elbow were normal and painless, and anatomical landmarks were normal.

R. S.—A nine-year old boy was seen July 6, 1933. Two days previously he had stumbled and fell downstairs, falling on his left elbow. After an attempted reduction by manipulation immediately after injury, considerable swelling and discoloration of the forearm and hand occurred.

Examination the day after manipulation showed considerable swelling of the elbow, bluish discoloration of the hand and forearm, and only a faint radial pulse was felt. All bandages and splints were immediately removed. The elbow was straightened and the arm elevated, when the pulse could be felt returning slowly. X-rays showed a supracondylar fracture of the distal end of the left humerus with considerable displacement of fragments.

An open reduction was advised and this was done on July 10, 1933, through a posterior incision. Considerable clotted blood was encountered, which was removed. The fracture was reduced and stayed in position fairly well with the elbow in flexion, so no internal fixation was used. The elbow was immobolized at about 80° of flexion because circulation of the forearm was best in this position. On July 20, ten days later, the posterior plaster splint was removed and motions

started. Then the elbow was held at right angles with adhesive. On August 3, all immobilization was removed and the patient urged to use the elbow only moderately, and to rest it in a sling if use produced pain.

I was fearful of myositis ossificans here, because of much induration and residual hard swelling about the joint. He, however, had an uneventful recovery.

Examination on March 24, 1934, showed flexion to about 45°, extension 170°. Pronation and supination were good; all motions were without pain. X-rays showed good union of the fragments had taken place.

A. H.—A nine-year old girl was seen September 13, 1938, about five days after an injury of her left elbow sustained when she fell from a stool. Her family physician attempted to reduce the fracture without success.

Examination showed considerable swelling about the left elbow with some discoloration. X-rays showed a fracture of the external epicondyle with some displacement of fragments.

An open reduction and fixation of the fragments was advised. This was done on September 21, 1938. The fracture was exposed and the fracture surfaces freshened. After approximation of the fragments, the epicondyle was attached to the humerus by means of a metal nail. Immobilization in plaster was maintained three weeks and then physiotherapy in the form of heat, massage and active and passive exercises started.

W. H.—A young man, aged 23, came to my office on August 14, 1937, complaining of numbness and weakness of the fourth and fifth fingers. Pain was also present along the medial portion of the elbow radiating to the third and fourth fingers. He gave a history of having an injury of the right elbow about 16 years previously. Just what treatment the patient had is not known. It should be noted that pain was his chief complaint.

Examination of the right arm showed considerable atrophy of the interossii muscles and the hypothenear eminence. The entire right hand was weaker than the left. Motions of the elbow were good. The medial condyle was much more prominent than on the lateral. The carrying angle was increased. X-rays showed an old fracture of the external condyle of the humerus, with considerable displacement of the fragment upward, and a pseudo-arthrosis between the fragments.

It was apparent that the patient was having some neurological disturbance in the forearm due to the deformity. An exploration was done on August 31, 1937. When the ulnar nerve was exposed, it was found to be stretched over the large medial condyle of the humerus and bound down by a band of fibrous tissue. This band of fibrous tissue was removed and the nerve was transferred to an anterior position over the medial condyle. Patient had no more pain in his fingers or arm after the operation. Six months after the operation, February, 1938, he was still free of pain, his feeling of numbness had disappeared, and the strength of the third and fourth fingers was slightly increased. I lost track of the patient after that.

I mention this case to illustrate a later complication of a fracture of external condyle of the humerus.

W. P.—A nine-year old boy was seen on October 8, 1935, one day after his left elbow was injured during a sandlot football game. The elbow was manipulated shortly after the injury, but because of the severe comminution, the fragments did not remain in position.

Examination showed a marked swelling of the elbow and hand with some bluish discloration of the fingers. The color was improved when the elbow was extended from a partially flexed position. X-rays showed a badly comminuted fracture of the lower end of the humerus.

Under ether anesthesia on October 8, an incision was made along the posterior border of the elbow for drainage of hematoma. A Kirschner wire was then inserted through the proximal portion of the ulna for skeletal traction. The arm was put in a Thomas arm splint with the forearm at right angles to the arm. Five and a half pounds traction was then applied.

On October 10, two days later, patient was comfortable. The color of the hand was good and the swelling had receded. X-rays showed the fragments in good position and alignment, except for one loose fragment which was located transversely in relation to the shaft of the humerus. On October 29, twenty-one days after skeletal traction was applied, the Kirschner wire was removed and a posterior molded splint applied which was removed daily for gradual active and passive motion.

On December 28, 1935, about three months after the injury, flexion was normal and extension present to about 160°. At this time, the transverse fragment was removed because one of the ends was causing some pressure necrosis of the skin.

In March, 1936, patient had a normally functioning elbow.

E. F.—This patient was first seen by me on March 6, 1934, and complained of pain and limited motion of the left elbow following an injury sustained eleven days previously.

Examination showed a moderate amount of swelling of the left elbow, which was held at an angle of about 140° of flexion. Pain was present on attempted further flexion or extension. Pronation and supination were painful and limited. X-rays showed a fracture of the head of the radius.

On March 8, the head of the radius was excised. Except for a sling, no other immobilization was used after surgery. On March 20, active and passive motion was started. On April 3, he was able to extend the elbow to 170° and flex it to 80° with no pain. Pronation and supination were also improved. On April 10, one month after surgery, he was able to extend it to 170° and flex it to 70°; pronation and supination were normal and there was no pain, and he was able to go to work.

DISCUSSION

Dr. E. M. Miller (Chicago): It seems to me that Dr. Mroz has covered very thoroughly the essential features of the treatment of fractures about the elbow. He and Dr. Scuderi both have stressed the importance of immediate care of these injuries. I should like to

go one step further and say that severe fractures of the elbow should never be put up in any kind of apparatus or splint and the patient discharged to return in a week or so for observation. These cases should always remain under the eye of the physician for several days, preferably in the hospital as they are all potentially very serious, especially when there is a great degree of injury to the soft tissues and complicated by injury to the large vessels and the neighboring nerve trunks. Perhaps some of you may be familiar with the outstanding case reported by Dr. Jim Jackson of Madison, Wisconsin, at the Western Surgical Society meeting at Omaha in which along with a fracture of the elbow the radial artery was ruptured and the blood supply to the hand was saved by immediate suture of this torn vessel.

My remarks pertain only to the severest types of fracture associated with injury to the median nerve particularly, and loss of the radial pulse. In my experience over a period of some 18 years I have found that the median nerve is the one most often involved, rarely the radial and ulnar, because the displacement of the lower fragment in the supracondylar injury is invariably backward and the median nerve is caught over the sharp edge of the long upper fragment. It was formerly my habit in these severe injuries with an enormous amount of swelling and blistering of the antecubital area to place the arm in a comfortable position without any splint, wait several days until the swelling was considerably reduced and then proceed with open operation approaching the fractured area through the mid-line posteriorly. We have lately been endeavoring at the Children's Ward at County Hospital, where a large number of these cases are seen every year, to devise a more efficient method of treatment which would obviate the necessity of open operation. As a result of this endeavor my resident in the Children's Ward, Dr. Brock, has devised a very simple and efficient apparatus which allows one to secure traction in four directions at the same time, with or without the use of traction on the ulna by means of a small picture hook screwed into the bone just distal to the olecranon process. Experience with this apparatus in eight cases thus far is very satisfactory, in that adjustments in direction and degree of traction may be very easily made as indicated by the x-ray, and our follow-up of these cases in the out-patient clinic shows that in all of them, so far, the reduction of fracture and the functional result has been almost perfect. It is the most efficient type of apparatus for supracondylar injuries that I have thus far seen.

Fracture dislocations of the capitellum, a very common injury in children, usually presents a clear-cut indication for reduction immediately, because there is no type of manipulation that will overcome the displacement and rotation of this loose fragment. If unreduced the capitellum remains ununited, and as the years go by and a growth disturbance develops it may lead to a late paralysis of the ulnar nerve. If this complication does develop our experience shows that transplantation of the nerve to the anterior aspects of the elbow is the procedure of choice.

EXPANSION OF THE MEDICAL IDEA IN VETERANS' ORGANIZATION

Overton Brooks, M. D.

Commander Chicago Medical Post No. 216, American Legion. Lt. Commander Medical Corp, Naval Reserve

CHICAGO

Mr. Chairman and Fellow Veterans:

It is significant from the caption of this paper that this medical idea, which is now functioning, will continue to do so. Furthermore, we sincerely hope that it will expand, more and more, until it takes in all there is to be had from the medical side of these veteran organizations. We further desire to lighten the burdens of the few and distribute them amongst all.

The medical idea is now comparatively old in Illinois and has at all times proven, through the Medical Commission, to be genuine and well worth while in our community, as well as in the state. Organizations in other states are now taking notice and at the prevailing time are receiving aid in organization from the present department surgeon of Illinois. You, of course, are familiar with the pioneer work in this field in 1931, and of the accomplishments of that advanced thinker and true friend of the veteran, one of the first department surgeons of the American Legion, Department of Illinois. I refer to our Chairman of the evening, my good friend, Dr. F. O. Fredrickson. I am indeed deeply indebted to Dr. Fredrickson for his kind assistance and for many of the facts contained in this paper. He was the first to realize what medicine meant to the veteran and to veterans' organizations in Illinois after the war, just as it meant so much to the men while in service and at war. Something had to be done to keep things within reasonable bounds, so he advocated, and had started a medical commission in this state.

After the World War was over, and democracy was safe, and we were to have no more wars, we all were anxious to get back to our regular endeavors and to rebuild that practice or business which so many had lost. Then came the rehabilitation period with its relative unpreparedness. The veterans and the government were desirous of doing something for the maimed and needy ones. Veteran organizations sprang

Presented at Veterans' Service Committee Dinner, 99th annual meeting of the Illinois State Medical Society, Rockford, May 2, 1939.

up and new members poured in. Resolutions were made, Congress passed bills, and veteran hospitals were built, equipped, and manned. Much has been done for the veterans, but we feel that too much was done in certain instances, by unguided individuals which has proven disadvantageous to the private physician, and tended to approach near the control of medicine by the government. Much also was done that tends to destroy that old fashioned self reliance and ambition which we inherited from our fathers. I refer only to those having non-service connected injuries and diseases, and especially those that are independent and could well afford to pay a private physician and receive services in a civilian hospital.

It is a bad influence, indeed, upon others when a well to do politician or any one else of prominence obtains a bed in our Veteran Facilities, with the greatest of ease. The time has arrived when more beds are being required for the needy ones on account of their advancing years and the inherent ills. We as veteran surgeons are quite willing to assist veteran organizations and the government in demanding for the needy proper care, and to see that justice is given to all.

Your present legion department surgeon, Dr. Norman Sheehe, of this city (Rockford) has done much to successfully further the medical idea in Illinois, and I also am thankful to him for the assistance given me. I must not forget at this time to mention the name of one veteran doctor who has done so much, and in such a graceful and courteous manner, for us all in veteran affairs and its medical problems. I refer to the Adjutant of the Medical Post No. 216, the American Legion, of Cook County, Dr. Thomas P. Foley. As they say in the Navy, "He is always on deck." Many others deserve mention here, but I am sorry I haven't the time to do justice to them all this evening.

Dr. Sheehe stated in his program for the Medical Commission of Illinois for 1938: first, to bring the medical men closer together in the post in order that a better understanding might prevail, with common problems faced on a common ground; second, to establish blood donor groups throughout the legion posts; third, to adopt an educational program in accordance with the policies of the Educational Committee of the Illinois Medical Society; fourth, to govern the health of the Boys State; fifth, to take active part in Child Welfare in the State. He has pointed out to you the duties of the District Surgeon, the County Surgeon, and the Post Surgeon; all of these surgeons to come under the supervision and guidance of the Department Surgeon, and to make annual reports to him.

Now, in my mind, this is a splendidly organized affair, but it is not organized close enough for quick action. I am informed that there are only two Medical Posts in the United States and one of these is in Chicago. As medical men we have a better conception of the proper medical service to be given to veterans than the layman has. We can point out to our lay veteran associates legislative matters and problems that are vicious or otherwise. We can be of great help to the Service Committee, and can aid the Department Surgeon and Medical Commission as a whole. Members of the Medical Post feel that more medical posts should be organized in Illinois and in other states. Lay veteran officers whom I have contacted concur in this idea. We desire to interest veteran doctors who are not members of veterans' organizations, and if possible have them organize active medical posts in their own districts. We desire to have the members in these Medical Posts come in closer contact with the lay veteran organizations and with the administrative officers. Medical men must affiliate themselves with lay groups now, and cease being individualists or, in the not too distant future suffer the penalty. We must learn to speak the language of the lay groups in order to be understood, or rather to learn to be practical in formulating any future programs.

We want the veteran organizations to realize that we are for service first, and that we are the only group that can really help and that we understand better the things required for the needy in time of physical distress. We want to be in a position where we will be able to discourage and prevent the use of veteran facilities by the well to do individuals or non-indigent veterans having non-service connected diseases and injuries. We wish to be able to prevent things coming up in post committee meetings that have no bearing upon veterans' affairs and are opposed to the real meaning and intent of these veteran groups.

I cite the vicious chiropody resolution of last

year which passed through the Cook County Council of the American Legion. It was a resolution to make officers of chiropodists in the Army, Navy, Marine, and Reserve Corps. (The chiropodist or foot specialists are ambitious men. They have diathermy machines, lights and what not. I understand they are now treating up to the knee, and will soon be shaking hands with the gynecologist.) They have a bill in Congress now to establish a Chiropody Corps in the services in spite of their past fruitless efforts. Later, through the efforts of one of our past department surgeons and others, this resolution was thrown out in a higher committee. This was done only on account of the thorough understanding of the lay veterans' methods and their train of thought. The so-called downtrodden or under dog is foremost in many of their minds and it takes a diplomat to deal with them. I understand that this unnecessary piece of foolishness was brought into the Legion affairs because one veteran felt sorry for his chiropodist friend and wished to help him. It is well understood that the Army and Navy have no place for these super specialists with their added expense to the government. We have written proof to that effect.

We feel that medical posts are quite necessary in veterans' organizations and more so now with the increase of facilities and the added work. We are not yet too old to fight for our rights, as well as for the veterans' rights. Then, also, members of a medical post have the time to study and understand things medical, and can expedite matters when necessary, better than can lay posts. They will be able to visit the facilities with lay committees, and with members of the Medical Commission. Of course, they must be conversant and familiar with medical legislative matters pertaining to the veteran and facilities. As has been suggested by the present department surgeon, the doctors of the legion can get together each year for council. The Medical Post can assist materially in this. They can assist in everything that the commission stands for and can easily act as liaison to the veteran organizations, and the Medical Commission of the medical societies. Surely the veteran organizations will welcome that which tends to increase and improve its membership.

It is hoped, that through the Medical Commission and the medical posts, we can be of such influence with the veteran organizations that any vicious legislative matters will suffer immediate defeat, that there will be no tendency to break down the good services that are being had now in the facilities, and that the morale of those rendering this service will not suffer.

As you see, I have really not presented anything new to you this evening, other than that we bring into the veteran organizations more of our medical groups as posts and commissions.

I am in hopes that you will make this a controversial affair and I welcome whatever criticism, constructive or otherwise, that you have to make.

It is possible to organize at least 48 medical posts in the U. S. Maybe every large city has sufficient veteran surgeons that are unattached to veteran organizations, for this purpose. I would assume that even in Illinois we can organize a possible 25 district medical posts.

DUTIES OF MEDICAL POSTS

1. Be informed on veteran legislative affairs pertaining to medical subjects.
2. To advise and consult with legislative veteran individuals or groups when necessary.
3. To advise or consult with post, county, district, or departmental surgeons when necessary.
4. Visit facilities with other groups when called upon.
5. Assist in caring for and examining members of Boys' State.
6. Aid in organizing blood donor groups.
7. To take an active part in the Child Welfare of the State.
8. To be a part of the commission or consultant.
9. To establish first aid stations at annual conventions and memorial day parades, and maintain offices at headquarters for treatment of ambulatory cases.
10. List at headquarters: all available veteran surgeons for calls during these affairs.
11. To assist disaster and relief committees.

Medical posts are limited to physicians and dentists and it, therefore, has with the aid of medical commission greater opportunities, not only to serve veterans' organizations, but to guide its destinies regarding medicine and its future in the United States.

As the National Convention of the American Legion meets in Chicago in September, I feel it quite opportune to suggest that now is the time to also consider a National Medical Commission of that body in furthering this medical idea.

ADDRESS

EDWARD CLAMAGE

Commander, The American Legion, Department of Illinois. Delivered at Rockford, Illinois, before Veterans' Division of the Illinois Medical Association, Tuesday, May 2, 1939, 7:00 P.M.

CHICAGO

Dr. Fredrickson and Gentlemen: I want to express the appreciation of the Department of Illinois for inviting to these annual dinners the Department Commander of the American Legion. I feel rather at home in a gathering of this kind where there are so many members of the American Legion present, men who are still directly associated with some of the things in which we are so vitally interested.

I would tell you that we continue along the lines which we adopted in the early days of the American Legion, which was to perpetuate democracy for Americans, and to advocate adequate preparedness for defense, and not for aggression. We continue to lay greater stress on these two major activities today, more so than ever before, because of the chaotic conditions that exist throughout the entire world. The Legion feels that the best way to peace is through an adequate national defense program, and we take issue with those of our good citizens who believe otherwise. We believe that the American Legion has been right all these years. However, the job is not complete and we continue to advocate that important program.

Recently you, as well as I, noted the scant publicity given in the daily papers to some of the students of the University of Chicago who took the Oxford oath. Fifty-five per cent. of the students that were interviewed at Northwestern University stated that they would not participate in any war that the United States might become engaged in. That is the feeling, not alone among those people, but among others who advocate exchanging our national emblem for another one that flies over dictatorial nations. They, too, advocate a disarmament program. Our land is chock full of those types of persons. This latter group has been instrumental in sending young American lads to Spain to fight for the Loyalists. Hundreds of them have come back in baskets, others are carrying battle scars of that civil war. In Chicago, this particular group, just the other day, had tens of thousands in line of march in celebration of May Day. A large meeting was held in Chicago, where not less than 20,000 persons were assembled. Class hatred was the topic, as it was at the February 22nd meeting in the city of New York, where some 25,000 within the auditorium were told another system of government was better than ours. And tens of thousands who held a contrary view, gathered on the outside of that great auditorium and anxiously awaited an opportunity to enter. Only adequate police protection prevented serious disorders.

The American Legion knows better than any person or group of persons in America today, the facts about the vast amount of un-American activities that are being carried on in this country. The American Legion has spent a great sum of money in the attempt to uncover all these un-American activities. The American Legion at the New York convention in 1937 passed a resolution calling upon Congress to investigate un-American activities. Out of that resolution the Dies Committee was born. The American Legion indicated to Congressman Dies that in the event that Congress would withdraw financial support, that financial support would be forthcoming, through the efforts of the American Legion, if needed.

The Legion today sponsors many measures before the Congress which are intended to eradicate from America those elements that are ready to destroy America. One of those measures is the Dempsey Bill, which provides for the deportation of any non-citizen of the United States who advises, advocates or proposes any program advocating a change in the form and system of government to that of a European one. The American Legion in an effort to avert civil war in America—and it is not an exaggerated statement—opposes the Ludlow Bill which provides for a referendum vote by the people on the question of whether we shall become engaged in a war with a foreign nation on foreign soil. We are opposed to this bill for the reason, among others, that there would come to these shores thousands of propagandists advocating for or against voting on this question of war. We can

visualize millions of dollars poured into America for the purpose of propagandizing Americans. We can visualize how the people of the United States would eventually become so divided on the question that it would certainly cause civil war.

Our school systems throughout America, wherever these foreign leaders imbued with foreign doctrines are, and wherever they can inoculate these doctrines into the school children, they do so. The American Legion is doing its part in a serious attempt to eradicate these elements from our school systems. We believe that the best way to combat these elements is through a youth program. Tonight you listened to a gentleman who talked about Boys' State.

For the fifth consecutive season, Boys' State will be held at the Fair Grounds in Springfield and more than 1,600 young men of high school age will attend. They will be given a practical lesson in the operation of our State Government. They will be divided into two parties. They will hold party conventions. They will operate the government and they will learn something about the method of government. All the various officers will be elected, including the members of the two branches of the legislature. They will be taught exactly how the government operates, and it will be proved to them that there is nothing wrong with this form of government, that the constitution of the United States is not obsolete, that it is just as sound today as it was at the time this government was formed. We are going to send those boys back into the schools from which they came with a greater knowledge of our system of government, and prepared to answer all insidious charges that are spread in the school system by those who come from families that have nothing in common with you and me, as far as our love and respect for this system of government is concerned.

Next month more than 15,000 medals will be distributed to boys and girls in the seventh and eighth grades—our annual medal award program —for the best demonstrations of honor, courage, leadership, scholarship and service. On April 14 we completed the annual national oratorical contest. More than 25,000 young men and women in the high schools of America competed in that contest. The contest was held in practically every state in the Union. The subject was, "The Constitution of the United States, Bill of Rights and Tolerance." It simmered down to five regional contestants and those five appeared in the city of Springfield where they competed for the highest honor. We induced Eddie Cantor to award a $4,000 scholarship in the school that the winner chose to enter. Last night on the Eddie Cantor program, young Fletcher Padgett, Jr., of South Carolina, who won the contest, was officially presented with the award.

Twenty-five thousand youngsters did a great deal of research work in finding out what privileges are guaranteed to the citizens of this nation under its constitution and bill of rights. Each oration was an argument against the things with which you and I are not in sympathy. There are many projects of a similar nature being carried on throughout the country. In a few short days, our annual baseball series will commence, and more than 600,000 young men of high school age will participate in the games. The purpose is not to make baseball players out of them, but to teach them to play the game fairly according to the rules and thus become good American citizens.

Gentlemen of the medical profession, you are familiar with some of the work of your American Legion posts; the clean-up campaigns; the iron lungs which have been provided in many communities in the United States at a great cost to those posts, their efforts which have brought about the reduction of diphtheria and all other contagious diseases. The American Legion always stands ready to be of service to the community, just the same as they did during the days of the Ohio River floods, and other disasters.

Dr. Brooks asked for constructive criticism. My subject tonight has been "Americanism," because regardless of the charges heaped on our country, the world over, we believe that America is still the best place in the world in which to live. We love America and we love our homes, and if there is a crowd of fellows who should be dissatisfied with existing conditions relating to employment for the men of forty years of age and over, they are the men who fought in the World War. There are over two million who have been hit by the depression, who are either in the W. P. A. or are pounding the cities' sidewalks looking for jobs. Last night I was accorded the privilege of talking on employment

over WMAQ. Sunday, in the various churches the sermons were on the unemployed veterans. The President of the United States issued a proclamation in connection with the campaign to find work for the veterans of forty and over. I know whereof I speak because I served for three years as Commander of the Veterans' Relief Commission when the peak load was 18,000 veterans' families on relief in Cook County. More than 4,000 of those families appear today on direct relief as unemployable cases.

Back in 1933 after the National Economy Act was put into effect, the federal government found itself with a situation that was very serious, because they had arbitrarily stated that those receiving compensation as presumptive cases could no longer receive compensation unless it could be proved that their disabilities were due to service. Boards of review were created to go over these cases.

There were three Boards appointed in Illinois and I was selected as a member of one of them. Business was pretty bad at that time, and I was told that this job would pay me $15 a day and $5 expenses when away from Hines. I accepted. The official instructions at the outset stated that the burden of proof should be on the government to prove that the veteran was not entitled to compensation. You did not have to read many paragraphs to find that the veteran did not have a leg to stand on. I immediately wired Washington withdrawing my acceptance. I was not the only one. There were many other members who did the same thing. I appreciated the invitation to serve but the act and procedure seemed to be very unfair and therefore, I could not be a party to this unreasonable program.

I think it is the most unfair thing in the world to discriminate against the men who served in the World War. Every one of us had occasion to see some man who was trying to prove that his disabilities were incurred during service, who to this day has not been able to establish that fact. He did serve in the front lines, and yet he is the non-service connected case of which you speak. Under your plan he would be barred from hospitalization, even though he could not afford to pay for service in a private institution. He is the fellow who is on W. P. A. or lacking necessary funds, and who, if he canont enter Hines or some other facility, will be obliged to go into the Cook County Hospital.

I say no decent veteran wants to see a man who was willing to give his life for his country go into the County Hospital. I have seen men with good war records, men who were not scratched in service, men who saw some real fighting, men of 46 years—the average age—to whom very few employers will give jobs.

I have heard Dr. Schulz tell you about the hospitals in Illinois, the four facilities operated by the federal government for neuropsychiatric, tuberculous and other diseased patients. Not all the cases in these institutions are the ones which the private doctor is seeking. Danville, which was a domiciliary home for old soldiers until a few years ago, has been converted into a mental institution, and there are 1,800 of those fellows there. You don't want those cases. Over at Hines, there are 400 advanced cancer cases. Those are not the cases you want. He said that there were 500 cases of tuberculosis there. I doubt seriously that those are the cases you are seeking. You heard another speaker say there were 300 or 400 neuropsychiatric cases at Hines. Those are not the cases you want either. Out of a population of 1,760 at Hines, 1,300 of those cases are not the cases you want, leaving a balance of 460 general medical and surgical patients. Certainly there must be some among those which are service-connection cases.

I want you to bear in mind, and this is not an idle statement, that seven per cent. of the patients in government hospitals are non-veterans, made up of government employees, C. C. C. boys and W. P. A. workers. I should doubt that you will see more than 300 at any time at Hines, out of 1,760, considered general medical and surgery patients. The average length of time which a patient stays in the hospital is thirty days. Multiply that by 12 and you have 3,600 patients out of a population of more than 4,000,000 in the metropolitan area of Chicago.

You asked for constructive criticism. You asked these one million and asked them to fight for America in days of peace, many serving as members of blood donor squads. Who make up the blood donor squads? It is not the members of the medical profession. They are made up from the one million men who are willing to give their blood and their time. They are your

comrades who are still on the firing line. It is an empty cause you are fighting. My suggestion would be, with all due respect to the medical profession, it should be said by your group that those are the fellows we served with, they are the fellows that were fighters or potential fighters in the days of the World War. It is not their fault that they did not land overseas, they were ready to go; it is not their fault that they found themselves in a non-combatant division.

You have asked us to go to bat for you at Springfield to have some law passed to bar physicians from practicing in Illinois who are non-United States citizens. The American Legion will support anything that it believes is for the best interests of the citizens of our state. We recall the days when the boys were marching off to camp, and they were assured that nothing would be too good for them when they got back; now we witness a peculiar attitude.

I appreciate having been invited to come here. Do not take it as a personal grudge against the profession. I know there are hypothetical cases. I know of the unfair demand that was made to remove Colonel Hugh Scott from Hines because certain cases were admitted. It is unfair to punish every one of our lads because a few of them have taken an unfair advantage of the situation. There is practically nothing these lads have. There is no pension, there is no compensation. They are not the ones that are advocating a general pension. What they want is jobs in private industry.

I appreciate all courtesies extended the American Legion of Illinois by this group.

I thank you.

1313 W. Randolph St.

ARE REGULATIONS FOR ADMISSION TO VETERANS' HOSPITALS AND FACILITIES ADHERED TO?

COLONEL ROBERT C. BOURLAND, M. D.

Commander Chicago Medical Post, No. 216, American Legion, Lt. Commander Medical Corps., Naval Reserve

ROCKFORD, ILLINOIS

Mr. Chairman, Commander Clamage, Comrades and Friends:

When I came into the room tonight I was welcomed by my old friend and classmate, H. Winnett Orr, who is going to deliver the oration in surgery tomorrow. He showed me a photograph of a part of our class taken forty years ago the coming month at the University of Michigan. It brought to mind the day that a company of National Guard, the 33rd Michigan Infantry, left Ann Arbor to entrain for the Spanish War. These boys were dressed in thick blue uniforms and were armed with old Springfield single-shot rifles; they were on their way to battle with the Spaniards who were armed with mausers, with smokeless powder. These boys were sent to several training camps in the South, to Tampa, Chickamauga Park, Jacksonville. Anyone who has followed military hygiene for the last forty years knows what happened. Typhoid, dysentery, yellow fever, and all those things were encountered, a sad comment on the state of preparedness that this country always has in time of war. Uncle Sam in between times goes to sleep. We had been asleep since the Civil War.

I mention these things to show the advances that have taken place in military hygiene, and also to show that when these boys get back from war the government takes care of them, realizing that they have gone forth unprepared. That has been the case with the veterans of every war the country has engaged in. As an employe of the Veterans' Administration I have had to go considerable distances at various times to look after veterans of the Civil War. All whom I can remember were men of over 90, and I was sent out to see that these people were placed in comfortable circumstances and to find out whether they were being imposed upon. So if we have sent our men out ill prepared to meet the various contingencies of war, we still try to take care of them when they come back.

When the World War came on various safeguards were thrown about the soldiers. Typhoid fever had been wiped out in the army, and wiped out of almost every place by sanitation. Venereal prophylaxis was in force. When the boys went out to the World War they were surrounded by every precaution, moral and physical. After the War the Veterans' Administration merged all its activities or rather, all the activities relating to the veterans were merged in the Veterans' Administration. I have served as a member of the Pension Board and examined veterans of the Spanish and Civil Wars. Now

Presented at Veterans' Service Commission Dinner, 99th Annual Meeting, Illinois State Medical Society, Rockford, May 2, 1939.

that is all taken care of by the Veterans' Administration which is a great advantage.

The next step, it seems to me, that we have to consider, that has a lot to do with this thing is the economic depression that befell us in 1929. We have all suffered from that, veterans, doctors and everybody else. A nationwide catastrophe took place. Indigency spread and doctors had to work and still have to work three times as hard for every dollar they get, and they have not nearly one-third as many dollars as they used to have. All the various agencies that take care of people without pay were brought under the scrutiny of the medical profession. So far as the subject of my talk is concerned, "are regulations for admission to veterans' hospitals and facilities adhered to," I have to say this, that these admissions are governed by law, by statute, and with your kind permission I will quote the law showing the generosity of the government and showing the very wide interpretation of which this law is capable.

"Section 6 of public law numbered 2, 73rd Congress, as amended by public law numbered 78, 73rd Congress, is hereby amended by adding thereto the following proviso: Provided that any veteran of any war, who was not dishonorably discharged, suffering from disability, disease or defect, who is in need of hospitalization or domiciliary care and who is unable to defray the necessary expenses therefore, (including transportation to and from the Veterans' Administration Facility) shall be furnished the necessary hospitalization or domiciliary care, (including transportation) in any Veterans' Administration Facility, within limitations existing in such facilities, irrespective of whether the disability, disease or defect was due to service. *A statement under oath of the applicant on such form as may be prescribed by the Administrator of Veterans' Affairs shall be accepted as sufficient evidence of inability to defray necessary expense.*" (Underscoring supplied.)

"Section 15. Any person who shall knowingly make or cause to be made, or conspire, combine, aid or assist in, agree to, arrange for, or in any wise procure the making or presentation of a false or fraudulent affidavit, declaration, certificate, statement, voucher, or paper, or writing purporting to be such, concerning any claim for benefits under this title, and, in addition to any and all other penalties imposed by law, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than $1,000 or imprisonment for not more than one year, or both."

It may not be out of place to describe the process of this admission. A detailed description of the method of handling applicants applying at this facility for hospitalization is as follows: The applicant is assisted in the execution of the form by the Contact Section, and before the answers to the questions are elicited, the penalties under Section 15 of the Act are carefully read to the applicant. It may be conservatively said that probably seventy to eighty per cent. of the applicants fall clearly under the classification of indigency, so that the question of a false statement as to the applicant's inability to defray hospital expenses in a civilian hospital is irrelevant. Very infrequently, however, a sworn statement of inability to defray hospitalization expenses in a civilian hospital and the veteran's sworn statement of his income appear at variance. Such cases are then referred to the designate, who goes into the matter very carefully with the applicant, warning him of the action required by Regulations and Procedure if after all explanations and information has been elicited as to his financial status a discrepancy still remains, making it necessary to submit all the data in the case to the Central Office for investigation by the Department of Justice to determine if prosecution for perjury appears warranted.

Colonel Scott in setting forth these regulations to me in a letter states, "It must be admitted that over the years such an interview between the applicant and my designate has resulted in the veteran or peace time soldier requesting that the application form be destroyed. The application form P-10 elicits information in detail as to the financial status of the applicant, with complete information as to his obligations that must be met at a specified date, mortgages on personal or real property, money that must be expended in support of relatives other than those in his immediate family, serious illnesses of members of his family in the immediate past, and expenses which have been incurred thereby which have made for a financial stringency—all of which information, in accordance with an Act of Congress, may not be divulged to any parties except by authority to release such information over the written signature of the veteran. All such information enters into the final determination as to whether or not, in the last analysis, a real discrepancy exists between the applicant's salary and his sworn statement of inability to defray hospital expense. If no discrepancy appears, in accord-

ance with the statutes heretofore mentioned, the veteran must be admitted to the hospital if a bed is available."

Then there is another thing that has to be taken into consideration, namely, the cases in which it may be stated that the patient is able to pay. "If such applicants, despite the dangers which have been set forth clearly to them, are willing to be hospitalized and still insist upon being hospitalized, it is reasonable to presume that the information which has been given under oath is strictly in accordance with their financial standing and that they are eligible as far as this requirement is concerned."

Another thing must also be taken into consideration. This oath required of each applicant is not a pauper's oath. The patient may be receiving considerable income or salary or wages, but his expenses for a prolonged period of illness or hospitalization will create a financial stringency which makes it impossible for him to pay for further hospitalization. That, it seems to me, shows the generosity of the government in receiving these men for admission whether their disabilities are service connected or not. If I am supposed to answer the question implied in the subject of my talk, "ARE THE REGULATIONS GOVERNING ADMISSION TO THE VETERANS' HOSPITALS AND FACILITIES ADHERED TO," I would say yes.

PAGET'S DISEASE

M. E. Rose, M. D.

DECATUR, ILLINOIS

Paget's Disease or osteitis deformans is a chronic disease of the bones found in both sexes and requires 15 to 20 years to reach its maximum development. It comes on slowly, has little influence on the general health of the patient until far advanced, and seldom, if ever, causes death.

The pathology is essentially a rarefying osteitis combined with new bone formation and clinically it is characterized by hypertrophy and deformity of the bones involved, with or without associated pain.

Read by Milton E. Rose, M.D., before the 64th Semi-Annual Meting of the District Medical Society of Central Illinois, Nov. 15, 1938.

The etiology remains unknown and the treatment so far is only symptomatic.

It has always been considered a rare disease. In some hospitals it occurs once in every 9,000 admissions. In the large hospitals in Boston it is seen once in every 15,000 patients and in the Mayo Clinic once in every 16,000.

Since Sir James Paget first described the advanced clinical picture of the disease in 1877, quite a large number of cases have been reported. In recent years fewer cases have been overlooked because of the more widespread use of blood chemistry and the x-ray, with the resulting diagnosis of less advanced cases. These early cases are usually without symptoms and are discovered by the x-ray, many times by accident.

Much difference of opinion has existed as to which bones are most frequently involved. The skull, pelvic bone, tibiae and femora seem to have been the most common sites until more recent investigations indicate this is not the case. G. Schmorl[1] was able to show on systematic examinations of a great number of skeletons that Paget's Disease is most often found in the spine, including the sacrum; in fact, it is often present exclusively in the spine. He found lesions in the sacrum or vertebral bodies in each of 138 cases. Usually only a single or a few vertebrae were involved, while complete involvement of the spine occurred only four times. When only a part of the sacrum or pelvis or a single or few vertebrae are diseased, one can readily see how clinical evidence may be absent.

Schmorl believes it is incorrect to state that the skull, tibiae and femora are the bones most often involved. His anatomic studies indicate that the spine, including the sacrum, is most subject to the disease, and usually but a single or a few vertebrae are involved.

Not much aid is obtained from the clinical laboratory in the diagnosis of Paget's Disease. The only test of value is the determination of serum phosphatase. Normal adult values are from 1 to 4.5 units per 100 cc. of serum whereas in Paget's Disease, values as high as 110 units are obtained. The level of the serum phosphatase seems to be proportional to the extent of involvement of the disease. Phosphatase is an enzyme which hydrolyzes phosphoric esthers to inorganic phosphates leading to a precipitation of calcium phosphate as bone. Therefore, it seems probable that the high serum phosphatase

in Paget's Disease is associated with the active formation of bone that is part of the disease.

High phosphatase values are also found in osteitis fibrosa cystica and in rickets but here



Case 1. Note the thickening and course mottling of the cranial bones; involvement of the facial bones; stump of the right femur; involvement of the left femur, left ulna, and right humerus.

the serum calcium is raised while the serum phosphorus is lowered. Normal levels of serum calcium and phosphorus are the rule in Paget's Disease.

A number of authors have stressed the close association between carbohydrate metabolism and Paget's Disease. Reports indicate that nearly one-third of the cases may give a family history of diabetes, and that as high as 88 per cent. may show a diabetic type of dextrose tolerance curve. Also a family history of obesity is obtained in many cases. Berman[2] treated 18 cases with a high calcium and vitamin C diet and the regular administration of adrenal cortex hormone, and reports clinical improvement in 16 of the cases. These facts would seem to indicate that Paget's Disease is a metabolic disorder due either to some deficiency or to some endocrine disturbance.

It seems that malignant disease occurs relatively frequently in these patients. Paget himself in 1889 commented upon it, and in eight



Case 2. Lateral view of the skull, showing the typical mottling of the disease.



Case 3. Pelvic involvement which was at first considered secondary carcinoma.

cases which he was able to trace to the end, five died of carcinoma or sarcoma. A review of reports in the literature suggests that this complication is not as common as the original work of Paget indicated. C. E. Bird[3] in 1927 reported sarcoma as a complication in about 11 per cent. of 64 cases. F. Speiser[4] collected 150 cases of Paget's Disease in Germany and six of these had sarcoma. He believes that an incidence of about 2 per cent. is more correct, since so many uncomplicated cases have not been reported. But even with this 2 per cent. incidence it appears that sarcoma occurs about 30 times more frequently in Paget's bone than in normal bone.

REPORT OF CASES

The following three cases, which are under observation at the present time, bring out some of the interesting features of the disease and one (Case 3) illustrates the difficulty which arises in differentiating Paget's Disease from bone malignancy.

CASE 1. Mrs. K, widow, aged 78, was first seen in 1930. A diagnosis of Paget's Disease had been made in 1918. The right leg had been amputated above the knee because of multiple pathologic fractures. X-rays taken at the present time show involvement of nearly all the bones with marked calcification of the arteries and trachea. The skull, spine, pelvis and left ulna are particularly involved. The blood phosphatase is 95.7 units per 100 cc. serum. There is no evidence of diabetes. Figures 1, 2, and 3 show respectively the anteroposterior view of the skull, the left femur and the stump of the right femur in its lower third, and the left ulna with marked deformity.

CASE. 2. T. C. S., male, aged 57, has noticed for about 15 years a gradual increase in the size of his head. His general health has been good enabling him to work daily as an executive and to play golf frequently. Glycosuria has been observed and his dextrose tolerance curve is typical of diabetes. Recently he has been troubled with vertigo and disturbance of vision due to heterophoria. The fundi show no signs of increased intracranial pressure. Figure 4 shows the lateral view of the skull, which is the only part of the skeleton involved. The blood phosphatase is 15.9 units per 100 cc. serum.

CASE 3. R. M., male, aged 73, has been under observation and treatment for diabetes mellitus since 1921. At the present time, he is taking 35 units of insulin daily. In 1933 a toxic adenoma of the thyroid was removed. Early in 1937 a diagnosis of carcinoma of the prostate was made in Florida and a course of deep x-ray therapy given. In July, 1937, the same diagnosis was made in a large eastern hospital, and the bony changes in the pelvis as shown in figure 5 were considered to be metastases. A second course of x-ray therapy was given and 600 milligram hours of radium through the rectum. In November, 1937, a perineal prostatectomy was done and after a careful search the pathologist could find no areas of carcinoma. The roentgenologist favored the diagnosis of Paget's Disease from the beginning, and the outcome of the case probably substantiates this diagnosis. At the present time this patient is enjoying good health.

SUMMARY

A brief review of the principle features of Paget's Disease is given and three cases are reported. None of these cases have shown any evidence of malignant disease while two have diabetes mellitus.

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A METHOD OF TREATMENT ADDRESSED TO THE CAUSE OF CORONARY HEART DISEASE

J. P. Roark, M. D.

BUSHNELL, ILL.

In this day of voluminous output of medical literature I think a man who insists on adding his voice to the volume owes to the profession either an apology or a sound reason for speaking up in meeting. The reasons for writing this paper are three: First, the weekly perusal of the obituary column in the Journal of the A. M. A.; second, a personal tussle with the condition about four years ago; and Third, the clinical experience required in the management and treatment of 18 cases counting myself as one of them.

This paper will consider coronary heart disease first as to pathology, and this part of the paper will consist almost wholly of quotations from a Billings' lecture delivered by Dr. Timothy Leary of Boston and published in J. A. M. A., Aug. 17, 1935. This paper gives such a graphic description of the lesions that are found in coronary heart disease and so definitely separates these findings from those other two entities, namely arteriosclerosis and hypertension, that the study of this article will well repay every man who is at all interested in this subject. The title of Leary's paper is "Atherosclerosis, the

Read before a staff meeting of the St. Francis and Marietta Phelps Hospitals at Macomb, Illinois.

Important Form of Arteriosclerosis, A Metabolic Disease." I quote from Dr. Leary's paper:

"What is atherosclerosis? Virchow's studies drew attention to the fatty substances that are found so often in the lesions of the disease. Marchand named the condition atherosclerosis, from the Greek word meaning mush or porridge, because of the consistence of some of the fatty matter found in the disease. Aschoff extended and modified the observations of Virchow and divided the fatty processes into (1) the more or less physiologic and temporary deposit of fat in the intima of the young, and (2) the definite disease process atherosclerosis. The lesions arise constantly in the intima, though late extension to the media may occur. Hypertension per se is a distinct entity. It is of importance, probably through pressure, in favoring the imitation and progress of arteriosclerotic lesions. Only in this relation is its association included. There remain only two forms of arteriosclerosis . . . Atherosclerosis, with the foregoing exclusions, is practically the only form of the disease arising in the aorta and its visceral branches. It is in particular the exclusive form encountered in coronary sclerosis and is the lesion occurring in the cerebral vessels and in the larger renal vessels."

ATHEROSCLEROSIS IS A METABOLIC DISEASE

"With the growth of experimental methods, efforts were made to reproduce the lesions of arteriosclerosis in animals. Since stresses appeared to be factors in its production, various physical methods, destined to provoke stress conditions, were practiced but without definite results. Epinephrine was known to increase the blood pressure, and series of experiments with this agent were carried out. The resulting lesions were medial, with necrosis and calcification, resembling the Mönckeberg type of sclerosis. Recent work with viosterol produced similar results."

"The contant association of fats with atherosclerosis led to dietary efforts to reproduce the lesions. To the Russian school belongs most of the credit for the production of intimal lesions in the arteries, first by the feeding of fatty foods and later by the feeding of rabbits with cholesterol. This work was not accepted by pathologists generally. Criticisms were made that the rabbit was not a suitable animal for experimentation in arteriosclerosis, that the results were due to the use of perverted diets, that the lesions described did not correspond exactly to the lesions of human atherosclerosis. The condition produced in the animal referred to, often contemptuously, as the 'cholesterol disease of rabbits'."

"My interest in arteriosclerosis arose out of observations that as a class persons suffering from alcoholism appeared to show a lesser degree of atherosclerosis than their ages would justify. A study of the lesions of coronary sclerosis, fatal examples of which disease are common in my material, led to the following conclusions:

"1. Atherosclerosis is a disease and not the inevitable consequence of age, since it appears in the young and may be highly selective in its localization. 2. The characteristic lesion in youth is a fibrosis associated with the presence of lipoid cells, which do not accumulate in large aggregations, because of the growth of the fibrous tissue. 3. The characteristic lesion at older ages is the accumulation of large collections of lipoid cells with minimal connective tissue support. As a result of poor nutrition massive necrosis occurs, giving rise to so-called atheromatous 'abscesses'. 4. The standard cause of death in the young is thrombosis following subendothelial necrosis which extends to the endothelium. 5. The standard cause of death in the older group is the rupture of an atheromatous 'abscess' into the lumen, usually followed by thrombosis. 6. The process is primary in the intima; stresses favor the localization of the lesions; morphologic lesions in the elastica and media occur secondarily. 7. The disease is not inflammatory in origin."

TREATMENT: The first requisite in the management and treatment is a fairly intelligent comprehension of the problems involved. And in this disease we have seen that those problems are not bacterial or infective but purely metabolic, so our whole efforts may be devoted to this one thing.

In efforts to read up on coronary heart disease one is immediately and constantly struck with the volume of literature on how to treat a case after the thrombosis or occlusion of the artery has taken place, and the paucity of literature on how to prevent this disaster. Mortality reports show conclusively that little or nothing can be done after occlusion has occurred, but seemingly no thought has been devoted to preventive treatment and this in the face of the fact that preventive medicine is now one of the most important functions or duties of the profession of medicine. I think Dr. Leary has shown conclusively that the lesions of coronary heart disease are due to an excess of cholesterol in the tissues and circulating medium of the body. The question naturally follows what organ or gland has been derelict and what may be done about it. The first organ that would occur to us would be the liver because we are all familar with those clods of cholesterol that have so long been misnamed gallstones, and they are supposed or known to be due to an inefficient functioning of either the liver or its appendage the gall-bladder. This brings me to my first experience with cholesterol. In November of 1922 I made my first non-surgical gall-bladder drainage and since that time I have had the experience of a few thousand of these drainages

all made either by myself or under my direct supervision. Among these cases 68 who had been suffering from gall-bladder colic have remained symptom free for ten or more years. In two others in this series of 70 cases the pains have recurred and required a short course of three drainages; they have remained symptom free. The Lyon technique was always used.

I cite this experience only to indicate the possibility of eliminating excessive accumulations of cholesterol from the human organism. I also want to use it as an argument that the general practitioner should retain charge of these cases as his results with this method will be incomparably better than surgery which has nothing to offer but amputation of the gall-bladder. The effects of this amputation have now attained the dignity of having a "syndrome" all its own; a syndrome that is likely to remain with the patient during the remainder of his life. It was during these 16 years of experience in the treatment of infection and dysfunction of the liver, gall-bladder and ducts that a few cases of what I diagnosed as angina pectoris came under my care in whom I discovered sufficient trouble in the liver or gall-bladder to justify giving a course of drainages. However, with no idea of relieving or curing the anginal symptoms, it was impossible to ignore the reports from the patient that his substernal pain had disappeared, that he had resumed his former duties, or as he put it, his heart was now acting better than it had been doing for years. Then I fortunately had my own personal experience in April and May of 1935. The study of Leary's paper made in Aug. '35 furnished a rational explanation of my own attack of what I had always looked on as "heart disease."

Symptoms: What is the symptomatology of hypercholesteremia—this metabolic disease that we have been calling coronary heart disease, angina pectoris, etc. I do not think I could do better than to describe my own experience. The first thing I noted was a mild form of dyspnea accompanied by a feeling of substernal discomfort that occurred after or with a moderate physical effort, and I may say that I was not in the habit at any time of making anything but moderate physical effort. I next noted an increase in my waist measurement and I began to leave the top button on my trousers unbuttoned. Later on I left one or two more unbuttoned and even opened one or two of the lower buttons of the vest when sitting down to rest which I did with increasing frequency. My appetite remained good but the bowels, which had always been regular, became somewhat constipated and the movements were rather scanty in amount. About this time I noted a gain in weight of about ten pounds and people said I looked better than I had for years. I surely didn't feel better. In a self examination of the heart I had difficulty in locating the apex beat and the pulse was about 100, but neither then or later did any edema of feet or ankles occur. I might remark at this time that about three years before I had my heart examined by a heart specialist and was given a clean bill of health. I now began to be troubled with vertigo when arising, especially if I got up in a hurry, and later this vertigo was present mildly at times during the day. During February I had two mild attacks of hemoptysis, being both times awakened at night with a sudden cough, and I brought up a small mouthful of blood. After this I began taking digitalis but it seemed to disagree with me, so I changed to another form and was no better. Then I took theobromine without results. I got more relief from a saline cathartic taken before breakfast than anything else but that seemed debilitating if taken often. In April I went to bed and called a doctor. I have gone into these matters with a good deal of detail because the history describes fairly well the cases I have seen and treated since that time. At no time have I found albumin in these cases but usually a reaction for bile is found in the urine. I think an examination of the blood for its cholesterol content would be a valuable aid in the diagnosis of these cases but have not had the facilities for doing this. I am convinced that when the question of diagnosis, i.e., early diagnosis of coronary heart disease, is submitted to the laboratory technicians we will get data that will be invaluable.

Etiology: Age—Practically all cases occur after the fourth decade, a few cases occurring in the male in the third decade. Average age of incidence in the male 53 years; in the female 63.

Sex—Ratio between sexes, male 7: 1 in the female.

Diet—Probably the excessive use of fats in

the United States has much to do with the prevalence of disturbed liver function in this country. One large and efficient clinic in the city of New York reports that 42 per cent. of their adult clientele are suffering from some form of liver dysfunction. A possible explanation of the difference of incidence and its delayed occurrence in women is the fact that among younger women more attention is given and pains taken to avoid loss of form. The various diets they impose upon themselves with the idea of retaining a youthful appearance are other contributing factors. While these so-called diets sometimes do some injury it probably accounts for their comparative freedom from coronary heart disease. Later in life when the dietary bars are let down a few cases of coronary disease among women appear. The only women patient I have had is a famous cook who undoubtedly appreciates her own achievements, as she weighed 254 pounds. She made a prompt recovery and now weighs 210 pounds and has lost 5½ inches in abdominal circumference. This disease also has its economic aspects; at least it so appeared in the cases I have seen. All of them have had access to all the food they cared to eat and the kind of food they fancied. This reminds me that in the history of man no tribe, clan or nation has had the superfluity of food that now is available in this country. This is particularly true of our supply of fats. The abundance of feeding grains in this country induces the farmer to put every ounce of fat that he can on an animal before it is marketed. With the adapting of various vegetable fats for human consumption this makes something of a task for the human liver, so it is not surprising that we now see many cases of hypercholesteremia. The supply of feeding grains also assures us of a plentiful supply of eggs, and the yolk contains a higher percentage of cholesterol than is found in any other common article of food in general use. In taking the history of cases of gall-bladder disease and disturbance of liver function one is immediately impressed with the fact that men eat many more eggs than do women. Many women say they do not like eggs and a woman who eats eggs will tell you that she eats one egg for breakfast two or three times a week. The average man who was served a single egg for breakfast would consider it a kind of insult. This dietary note might very well be of some significance.

Treatment: I will begin this by quoting from Dr. Harry Gold's article in the Journal of the A. M. A. of Jan. 7, 1939. This article is entitled "Drug Therapy in Coronary Disease." The article begins with two interesting sentences: "The use of drugs in coronary disease resolves itself into the treatment of several symptoms and functional disorders of the heart and circulation. There are at present no chemical agents that can materially influence directly the cause of the structural abnormality in the heart muscle and its blood vessels." You will note this statement is of very late date and represents the informed opinion of a man familiar with the subject as considered from a certain standpoint. The article covers the subject fully as to use of standard remedies for control of symptoms and also as to their futility as a cure of lesions or the cause of the disease. In fact I do not think he designates or refers to the causal element. I wish to challenge this view of coronary heart disease and propose to you a rational concept of the disease and a simple, rational and effective method of treatment. I have quoted from Dr. Leary the demonstrated pathology of the disease and that this pathology is brought about by an excess of cholesterol in the blood and tissues. I have given dietary and economic facts that explain the increased present day frequency of the disease and its predominance in the male. I have, I think, proved that it is possible to dissolve and eliminate those clods of cholesterol commonly known as gallstones with complete relief of symptoms and every evidence of restored liver function. It to me seems altogether logical to expect, by the same therapeutic means, to remove these other accumulations of cholesterol whose presence have become such a menace to life. Clinical experience amply proves this view of the condition.

A word as to non-surgical drainage of the gall-bladder. Doubt exists in the minds of physicians and often the procedure is referred to as duodenal drainage. This to my mind is a poor term. In the first place I know of no condition of the body or of the duodenum that ever calls for drainage of that section of the bowel. On the other hand, I have a daily visual demonstration of the effectiveness of the measure in not only draining the gall-bladder but its effi-

ciency in freeing clogged ducts and restoring function. When coronary heart disease is considered from a metabolic standpoint and the offending material identified it would certainly seem that we might now hope for a somewhat brighter prognosis in these serious cases. In the treatment of these cases an early diagnosis is imperative. If the diagnosis is not made until after occlusion occurs it is practically useless, and I think the formulation of a working syndrome by both clinicians and laboratory technicians is now our first need. After a diagnosis is arrived at early enough the treatment is easily carried out.

My routine is first to establish a dietary eliminating as much as possible all fats. If occlusion seems imminent I put the patient on separated milk, light brown sugar and orange juice until the gall-bladder has been emptied three times at five-day intervals, and the operator must satisfy himself that the cystic duct is open and functioning. This is usually plainly shown by the changed character of the bile and also by the marked relief of all symptoms, which if the drainage has been carried out properly will be shown in this short time.

After the third drainage another is given in ten days, again in 20 days and repeated in 30 days, making the whole time of treatment cover about 70 days. The last drainage is made with as much care as possible, i.e., as to presence, specific gravity and general appearance of the B. fraction, that is, the gall-bladder bile. During the first period of treatment nitroglycerine 1/100 gr. may be used so long as paroxysms of pain are present but this is rarely needed after the third effective drainage. I give very little digitalis and when given I use a small dose and always combine the tincture of digitalis with the tincture of opium in the proportion of five to one.

An attempt to digitalize a patient with these pathological changes would be patently dangerous and the attempt might possibly be made because some of these cases have very few of the classical signs of angina pectoris.

As an attempt to justify this effort allow me to quote from the February issue of the Illinois Health Messenger on mortality in Illinois in November, 1938: "Diseases of the Circulatory System 2,186, Diseases of the Heart 2,058, total 4,244, with the rate steadily rising."

BILATERAL CORTICAL NECROSIS OF THE KIDNEYS

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Most cases of bilateral cortical necrosis of the kidneys have occurred during pregnancy. The case which we are reporting was not associated with pregnancy, and was accompanied by essential hypertension and thyroid deficiency. Anuria is the most important clinical symptom. Renal infarction which is usually a complication of cardiovascular disease, and bilateral ureteral occlusion must be ruled out, as well as other causes for anuria, before a diagnosis of bilateral cortical necrosis can be made clinically. The condition is almost invariably fatal, although a few cases have been reported which have recovered following the intravenous use of glucose and increasing the fluid intake, and a few following decapsulation of the kidney.

Ash[1] made an exhaustive search of the literature in 1933 and found 60 cases and reported two from his own experience. He also reviewed numerous articles on eclampsia to determine if cases of bilateral necrosis of the kidneys had been included among them, and not reported as such. He chose 44 cases in which there was no doubt as to the diagnosis. Of these "32 complicated pregnancy, two followed the intravenous use of camphor, three were of cryptogenic origin and one occurred in each of the following conditions: scarlet fever, diphtheria, carcinoma of the prostate, pulmonary tuberculosis and trauma." Antepartum hemorrhage was present in 13 cases collected by Schriver and Oertel.[9] Barber[2] reported autopsy findings in cases of dioxane poisoning where the chief lesions were symmetrical necrosis of the kidneys and central necrosis of the liver.

More recently Evans and Gilbert[4] reported a case which occurred during pregnancy, and Garvin and Van Wezel[5] reported three cases which were not associated with pregnancy and which also showed severe central necrosis of the liver.

Experimentally Glynn[6] has reported cortical necrosis of the kidneys in rabbits following injections of staphylococcus toxin. Byrom[3] has

produced lesions in the kidneys of rats by injecting very large doses of vasopressin (pitressin) which resembled closely the bilateral cortical necrosis found in human cases. Smaller doses gave lesions which resembled in some respects those seen in human cases of preeclamptic toxemia and eclampsia.

CLINICAL HISTORY

An obese 50-year old housewife entered Grant Hospital on September 29, 1938 in a semistuporous condition. Five days prior to entrance the patient complained of constipation and colicky pains in the abdomen. Anuria had been present for two days. The heart was enlarged to the left. The blood pressure was 184 systolic and 100 diastolic. The R. B. C. was 4,800,000 and the W. B. C. was 4,200. A differential count showed 2 per cent. polymorphonuclear leukocytes, 22 per cent. band forms, 21 per cent. juveniles, 2 per cent. myelocytes, 3 per cent. basophils, 27 per cent. monocytes, 22 per cent. lymphocytes and 1 per cent. irritation forms. The N. P. N. was 200 mgm. per 100 cc. of blood. A total of two oz. of dark urine was obtained with two plus albumin and numerous pus and red blood cells. The patient died four days after admission to the hospital.

The past history with reference to hypertension, thyroid dysfunction and obesity dated from April 1932 when a subtotal thyroidectomy was performed. In January 1933, she came to Grant Hospital complaining of nervousness, weakness, tremor and a swelling in the right side of the neck. The blood pressure at this time was 200/105. The pulse was 100 and the electrocardiogram showed left axis deviation and signs of myocardial damage. She lost 30 pounds in weight during the next few months and the Basal Metabolic Rate increased up to plus 88. In May 1933, a partial removal of the right lobe of the thyroid was performed. In December 1937, she weighed 208 pounds and complained of occasional swelling of the ankles and dyspnea. Thyroid extract had been prescribed for several months prior to her final admission to the hospital.

AUTOPSY FINDINGS

The autopsy was performed 12 hours after death. The heart weighed 400 grams and showed eccentric hypertrophy. The spleen weighed 420 grams and showed small areas of hemorrhagic infarction. The right kidney weighed 270 grams, the left 310 grams. The surfaces made by sectioning showed the greater part of the cortex to be pale tan mottled with occasional irregular dark purple red areas. The yellow necrotic cortical tissue averaged 4 mm. in thickness and was surrounded by a narrow dark purple red zone. There was a narrow purple grey subcapsular area which measured up to 1 mm. in width. Some of the columns of Bertini were also pale tan and were surrounded by a narrow rim of dark purple red tissue. In a few places the continuity of the yellow necrotic cortex was interrupted by a narrow strip of purple grey non-necrotic tissue extending from the pyramids to the subcapsular region.

Microscopically there was a wide zone of necrosis in the cortex of the kidney in which only hazy outlines of the tubules, glomeruli and blood vessels could be recognized. Nuclear fragments were seen in the blood vessel walls and in the tubular epithelium. Polymor-

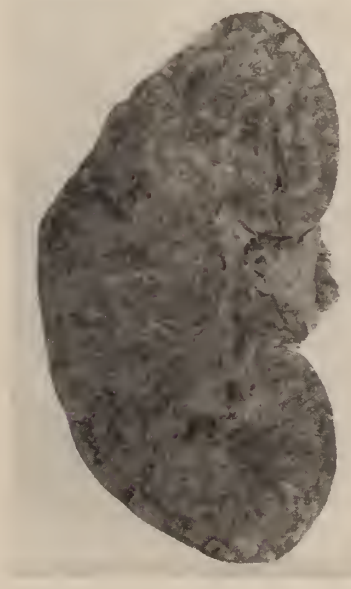


Fig. 1. A cut surface of the kidney showing the extensive cortical necrosis surrounded by a hemorraghic zone, and with extensions into the columns of Bertini.



Fig. 2. Shows the narrow subcapsular intact area on the right fairly sharply demarcated from the necrotic area on the left.

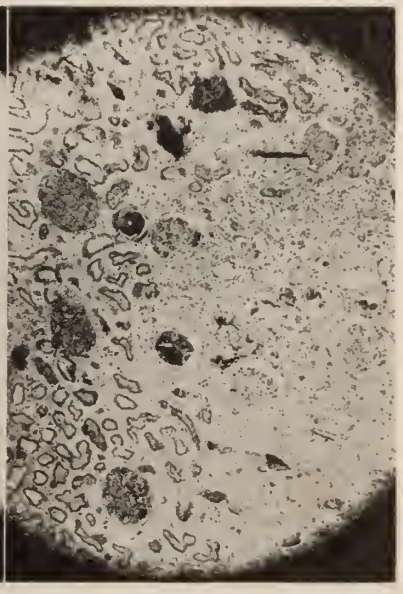


Fig. 3. Shows the necrotic zone to the left and the cortico medullary junction and suprapyramidal portion to the right.

phonuclear leukocytes were found in the interstitial tissue in increasing numbers as the outer hemorrhagic zone was approached. The lumina of some of the intralobular arteries and the finer glomerular branches in the necrotic zone were partially filled with clumps of conglutinated red blood cells and strands of blue staining material which was best shown by Mallory's phosphotungstic acid hematoxylin stain. In the hemorrhagic zone surrounding the central necrotic areas the glomeruli and intertubular capillaries were markedly engorged with red blood cells. In the subcapsular areas the nuclear structures were fairly well preserved.

DISCUSSION

The pathogenesis of bilateral cortical necrosis has been discussed in detail by Scriver and Oertel[9] and more recently by Oertel.[7] They followed the studies of Ricker[8] which dealt with the influence of varying degrees and types of irritation on the blood vessel walls particularly through nerve stimulation. Excessive irritations caused varying degrees of vasodilatation of the arterioles and capillaries with ultimate complete stasis.

The factors which bring about the common circulatory collapse of the terminal arterioles and capillaries of the kidney are not known. It cannot be narrowed down to factors occurring only in pregnancy, since a few cases have been reported in adult males and children and also where an infection alone was present. There is not sufficient clinical or experimental evidence to suggest that the combination of hypertension and endocrine disturbances, such as was present in this case, can produce bilateral cortical necrosis of the kidneys.

SUMMARY

A case of bilateral cortical necrosis of the kidney is reported, which was unassociated with pregnancy and which was accompanied by essential hypertension and hypothyroidism.

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STUDIES IN CORONARY DISEASE

I. Relation of Coronary Sclerosis to Heart Weight and to Right and Left Ventricular Hypertrophy

by

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The present work represents a portion of a larger study of the nature and manifestations of coronary heart disease. This report deals chiefly with the effect of coronary disease on the total heart weigth and on the thickness of the right and left ventricular walls.

The normal weight of the average adult human heart has been the subject of much investigation for generations. Grey in his textbook[1] places the average heart weight at 280-340 grams for the male and 230-280 grams for the female.

Cunningham[2] states that the normal heart weight is 310 grams for the male and 255 for the female. Morris[3] uses the figures of 312 and 255 grams respectively. White[4] states that the average heart weight for the male is 300 grams and for the female 250 grams. Willius and Smith,[5] on the other hand, designate for the same the figures 294 and 250 grams.

Considering all these sources we have decided upon 300 grams as the normal heart weight for the adult male and 250 grams for the female.

There still exists relatively little information on the standard thicknesses of the left and right ventricular walls of the adult human heart. White[4] states that the average maximum thickness of the human left ventricular wall is 10-12 mm. and of the right ventricle 3-4 mm. Most

of the other textbooks, however, remain significantly silent on this point. In the present study the average thickness of the left ventricular wall is assumed to measure 10 mm. and that of the right ventricle 3 mm.

Various factors and conditions may be responsible for the enlargement of the heart beyond these normal limits. It is known that histologically cardiac hypertrophy is brought about by an increase in the mass and volume of the existing myocardial fibres rather than by a multiplication of their number. The actual mechanism of such hypertrophy has been the subject of considerable controversy. Loeb,[6] one of the earlier investigators, believes it to be due to the excessive absorbtion of water. Age, per se, is no factor in the production of cardiac hypertrophy according to Parkinson[7] while Willius and Smith[5] assume it to be one of the factors. Eyester[8] and Dietlen[9] believe that stretching of the myocardial fibres is the primary cause for hypertrophy. Most investigators, however, are of the opinion that cardiac hypertrophy is not due to any one single cause in every case. A multiplicity of factors seems to be at work in bringing about these changes and among these factors are listed elevated basal metabolism rate, increased physical exertion, anemia, coronary sclerosis, inflammatory changes, fibrosis, etc.[10]

The effect of coronary sclerosis alone on cardiac hypertrophy is still being investigated. Horine and Weiss[11] followed 20 such cases for an average of 3 and 5/6 years and found no cardiac enlargement on x-ray investigation. Miller and Weiss,[12] Huber,[13] Herrick[14] and Clawson[15] likewise deny the influence of coronary sclerosis on cardiac hypertrophy. On the other hand, Bartels and Smith,[16, 17] Palmer[18] and Katz[19] believe there is a definite relationship between coronary sclerosis and cardiac hypertrophy.

Experimental studies on ligation of the coronary arteries in dogs confirm the relationship between coronary obstruction and cardiac hypertrophy according to some investigators (quoted by Palmer[18]).

THE METHOD

In our attempt to eliminate all other causes for cardiac hypertrophy we have discarded all cases with hypertension, valvular lesions, syphilis, inflammatory myocardial changes, pericarditis, thyroid disease, congenital heart deformities, anemias, cor pulmonale and all cases with impaired kidney function.

Out of a total of 7,970 consecutive autopsies on adults performed at the Cook County Hospital during the years 1929 to 1935 there were 305 cases of proved coronary sclerosis. Out of these 183 cases had to be eliminated because of the presence of one or more of the non-coronary factors for hypertrophy in addition to the changes in the coronary arteries. 122 cases were thus left in which, as far as could be determined, coronary sclerosis was the only possible cause for cardiac hypertrophy.

The cases were then classified according to the degree of involvement of the vessels, using the method of the late Dr. Richard Jaffe, Director of the Department of Pathology of the hospital. Complete obstruction of the coronary artery was designated as 4 plus; rigid "pipe stem" walls without anatomical obstruction 3 plus; plaques involving about 2/3 of the circumference 2 plus and if less than that, 1 plus. In addition, the cases were also classified as to sex and color.

The incidence and degree of coronary sclerosis per color and sex is shown in Table 1.

TABLE I.

Color and Sex	1 plus	2 plus	3 plus	4 plus	Total
W M	4	5	27	48	84
C M	0	0	4	4	8
W F	1	1	9	12	23
C F	0	2	1	4	7
Total	5	8	41	68	122

This table clearly indicates the marked incidence of serious coronary heart disease in white males and its relative infrequency in the colored race.

The percentages of increase in the weights of these hearts were calculated on the basis of 300 grams for the male and 250 grams for the female, the standards mentioned above. Thus if the heart of a male weighs 390 grams, the excess of 90 grams was taken as 30% increase in weight, while the same heart weight in a female would yield an excess of 140 grams or 56% of an increase in weight. In all our comparisons we have used only percentage increases, as these stand already corrected for the differences in the normal heart weights according to sex.

TABLE 2.

Coronary Disease and Cardiac Hypertrophy

Color and Sex	Number of cases	Average heart weight in grams	Average increase in grams	Percentage increase
		Group—1 plus		
WM	4	390	90	30
CM	0	0	0	0
WF	1	227	0	0
CF	0	0	0	0
	Total average increase for this group 24%			
		Group—2 plus		
WM	5	403	103	33
CM	0	0	0	0
WF	1	260	10	4
CF	2	445	195	78
	Total average increase for this group 40.5%			
		Group—3 plus		
WM	27	439	139	46.4
CM	4	325	25	8
WF	9	377	127	50.8
CF	1	455	205	82
	Total average increase for this group 43.9%			
		Group—4 plus		
WM	48	437	137	46.3
CM	4	517	217	72.5
WF	12	380	130	52
CF	4	432	182	73
	Total average increase for this group 50.4%			

Table 2 clearly indicates a definite relationship between the degree of coronary sclerosis and cardiac hypertrophy.

The effect of coronary disease on the relative thickness of the left and right ventricular walls is shown in Tables 3 and 4. (Here likewise the comparative data are indicated in percentages of increase in thickness over and above the accepted normal standards of 10 mm. for the left and 3 mm. for the right ventricular wall.)

TABLE 3

Effect of degree of coronary sclerosis on thickness of left ventricular wall. (Few cases had no record of such thickness.)

Color and Sex	Number of cases	Average mm. thickness	Average increase	Percentage increase
		Group—1 plus		
WM	4	14.8	4.8	48
CM	0	0	0	0
WF	1	12	2	20
CF	0	0	0	0
	Total average increase for this group 42%			
		Group—2 plus		
WM	5	14.8	4.8	48
CM	0	0	0	0
WF	1	12	2	20
CF	2	19	9	90
	Total average increase for this group 55%			
		Group—3 plus		
WM	27	16.4	6.4	64
CM	4	16.7	6.7	67
WF	7	15.7	5.7	57
CF	1	17	7	70
	Total average increase for this group 63%			
		Group—4 plus		
WM	48	16.17	6.17	61.7
CM	4	17.5	7.5	75
WF	12	15	5	50
CF	4	13.5	3.5	35
	Total average increase for this group 58%			

TABLE 4

Effect of degree of coronary sclerosis on thickness of right ventricular wall. (Few cases had no record of such thickness.)

Color and Sex	Number of cases	Average mm. thickness	Average increase	Percentage increase
		Group—1 plus		
WM	4	4.25	1.25	41.6
CM	0	0	0	0
WF	1	3	0	0
CF	0	0	0	0
	Total average increase for this group 33%			
		Group—2 plus		
WM	4	4	1	33.3
CM	0	0	0	0
WF	1	2	0	0
CF	2	5.5	2.5	83.3
	Total average increase for this group 38%			
		Group—3 plus		
WM	27	3.37	0.37	12.3
CM	3	5	2	66.7
WF	6	3.67	0.67	22.3
CF	1	5	2	66.7
	Total average increase for this group 19.6%			
		Group—4 plus		
WM	45	4.42	1.42	47.3
CM	4	5.25	2.25	75
WF	12	3.5	0.5	16.7
CF	4	4.25	1.25	41.7
	Total average increase for this group 43%			

As seen from these tables coronary disease has also a very definite effect upon the relative thickness of the ventricular walls. However, this relationship between the degree of sclerosis of the vessels and its relative effect upon the respective wall exhibits a rather peculiar pattern. The following graph clearly demonstrates this pattern and represents a composite idea of the various anatomical changes produced in the heart by the onset and intensification of the degree of sclerosis of the coronary arteries.

COMMENT

Several facts seem to stand out from the study of these tables and graph. In the first place, there can be no doubt that coronary sclerosis per se causes a definite and proportionate increase in the total heart mass and weight. This is particularly striking when all other conceivable causes for cardiac hypertrophy have, as in this study, been eliminated.

More interesting, however, is the peculiar seemingly reciprocal response of the left and right ventricular walls to the degree of coronary sclerosis. It would appear that early in this process of calcification of the coronary vessels both ventricles, but especially the left, respond with an increase in the thickness of their walls. As the hardening process progresses the left ventricle seems to take over the brunt of the load and goes right on thickening its walls while the

right ventricular walls actually seem to either atrophy or to grow thinner in some unexplained manner. This continues up to the time when the coronary vessels become almost completely obliterated. Whether due to increased passive venous congestion or to some other, as yet unexplained, factors the right ventricle then resumes its hypertrophy while the left ventricle begins actuall yto decrease in thickness. We have no explanation to offer for this phenomenon.

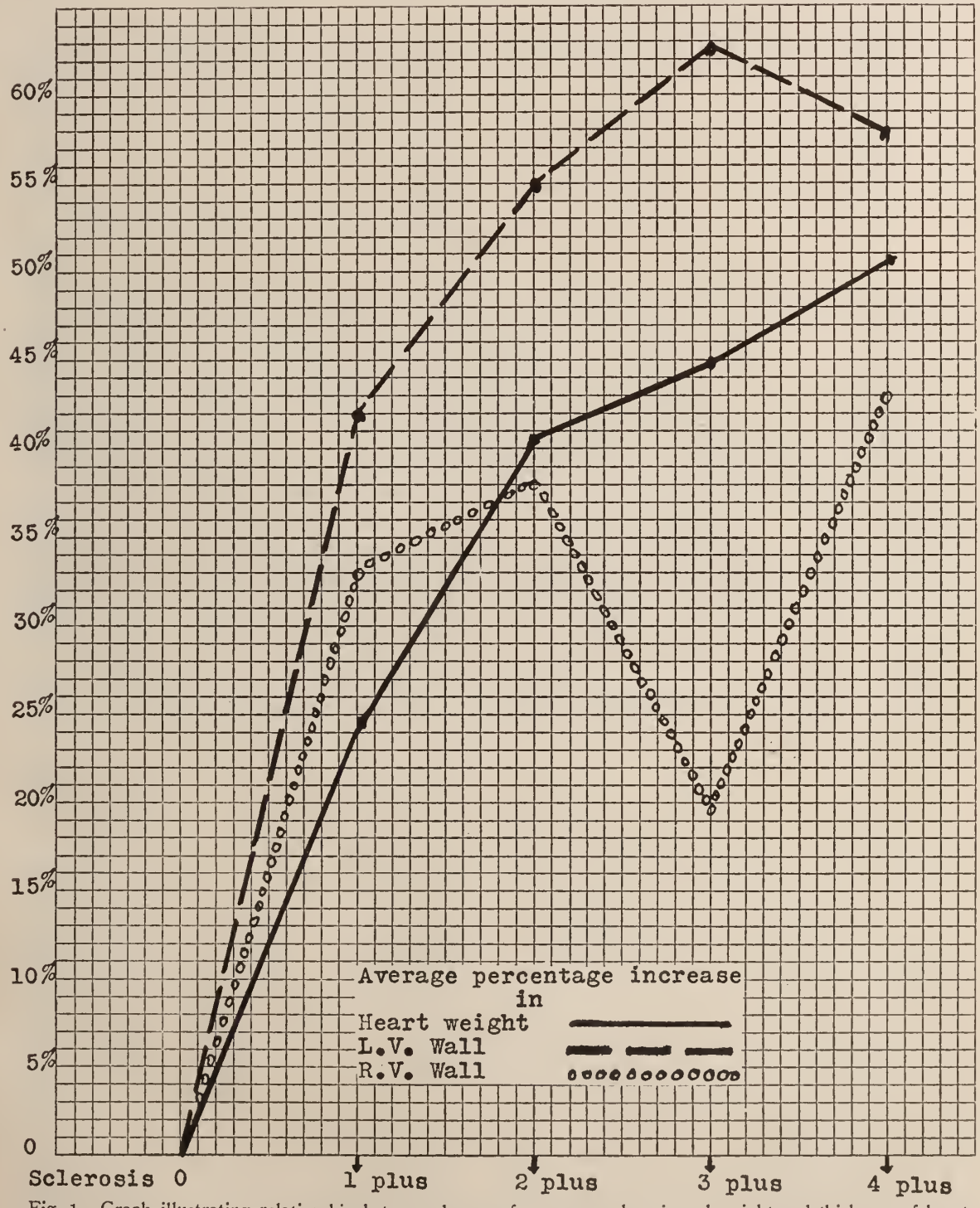


Fig. 1. Graph illustrating relationship between degree of coronary sclerosis and weight and thickness of heart.
Fig. 1. Temperature and pulse record. Note influence of sulfapyridine on blood cultures from the 15th to 26th day of illness.

SUMMARY

1. Coronary disease causes a definite and progressive increase in the total heart weight.

2. In the early stages of coronary sclerosis the left ventricle continues to hypertrophy while the right ventricle actually seems to atrophy.

3. In the terminal stages of coronary sclerosis this relationship between the ventricles seems to reverse.

4. Coronary sclerosis is more common in males than in females and is relatively rare in the colored race.

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FATAL TRICUSPID ENDOCARDITIS DUE TO TYPE 1 PNEUMOCOCCUS TREATED WITH SULFAPYRIDINE

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Several unusual features and sequellae of pneumonia are presented in this report—mediastinal empyema; pneumococcic endocarditis, Type 1, with involvement of the tricuspid valve; and the influence of sulfapyridine on the pneumococcemia.

Ruegsegger[12] states that pneumococcus endocarditis is not an uncommon complication of pneumococcic sepsis and reported 19 cases gathered over a period of 23 months during which 655 patients were admitted with an acute pneumococcus infection. The literature is relatively scant with proved cases of pneumococcus origin. According to Locke[7] and Lord[8] the pneumococcus should be demonstrated in the endocardial lesion itself as the bacterial incitant morphologically, culturally and serologically.

Ruegsegger[12] opposes these views, stating that it precludes the making of the diagnosis ante mortem and suggests that acute endocarditis occurring during the course of lobar pneumonia should be considered pneumococcic in origin until proved otherwise. In ten out of his 15 cases in which an autopsy had been performed, cultures were made from the vegetation and each time the same organism recovered was also cultivated from the blood of the patient during life. In Locke's[7] report of 835 fatal cases of pneumonia, of the 30 cases with acute endocarditis, in only 14 the pneumococcus was recovered from the vegetations.

Type 1 pneumococcus is most commonly associated with the endocardial complication of pneumonia. Bloomfield,[2] Palmer,[9] Funk,[6] Locke,[7] and Thomas and O'Hara[13] reported probable and proved cases where the Type 1 was the offender: Lord[8] and Clough[3] found Types 2, 3 and 4 pneumococcus. In Ruegsegger's[12] series Type 1 was isolated twice; Type 5, five instaances; Type 4 and 8 twice each; Type 2, 7, 9, 11, 12, 20 and 29, once each.

While acute pneumococcus endocarditis in-

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volves the left side of the heart more frequently than the right side, the relative frequency of right-sided involvement is greater. Preble[10] reporting 141 cases of pneumococcic endocarditis found the left side involved in 82.3 per cent., the right side in 12.0 per cent. and both sides in 5.7 per cent. Comparing his findings with those on acute endocarditis in general, he noted that the right heart was involved oftener in pneumococcus endocarditis than endocarditis in general and that the tricuspid valves were frequently attacked. In 23 cases Lord[8] found the left side involved in 18, the right side in three and both sides twice. In 15 cases Reugsegger[12] noted that the left side was involved in thirteen, the right side once and both sides once.

Sulfapyridine has received considerable interest in its reported efficacy in the treatment of pneumococcic pneumonia,[1, 5, 4] pneumococcic peritonitis,[1] pneumococcic meningitis[11] and subacute bacterial endocarditis.[1, 14] Bacteremia was present in many of these instances.[10, 11] The incidence of complications were somewhat decreased; however when they did occur, other measures such as drainage of empyema cavities, besides the sulfapyridine, was necessary before a complete recovery could be affected.[1, 5] However, there have been no published reports of pneumococcic endocarditis as a complication of pneumonia in which sulfapyridine had been used in the management of this complication.

Report of Case:—R. M., a fourteen-year old white female, weight 80 pounds was admitted to the Lutheran Deaconess Hospital complaining of cough, fever, dyspnea, pain in the chest, chills and loss of weight. Four weeks prior to admission the patient had a "cold" which ran a mild course for two weeks after which she began to have a pain in her chest, a high temperature and a cough which increased in intensity. A portable x-ray revealed consolidation of the left lower lobe, and the sputum Type I pneumococcus. 50,000 units of serum was administered. After ten days the temperature dropped to 100 degrees but during the next eight days it ranged from 100° up to 106° accompanied often by severe chills. On the 9th of January she was admitted to the hospital.

Physical examination revealed an acutely ill, thin girl who had moderate respiratory difficulty. The temperature was 102.4° F; the pulse 140; the respirations

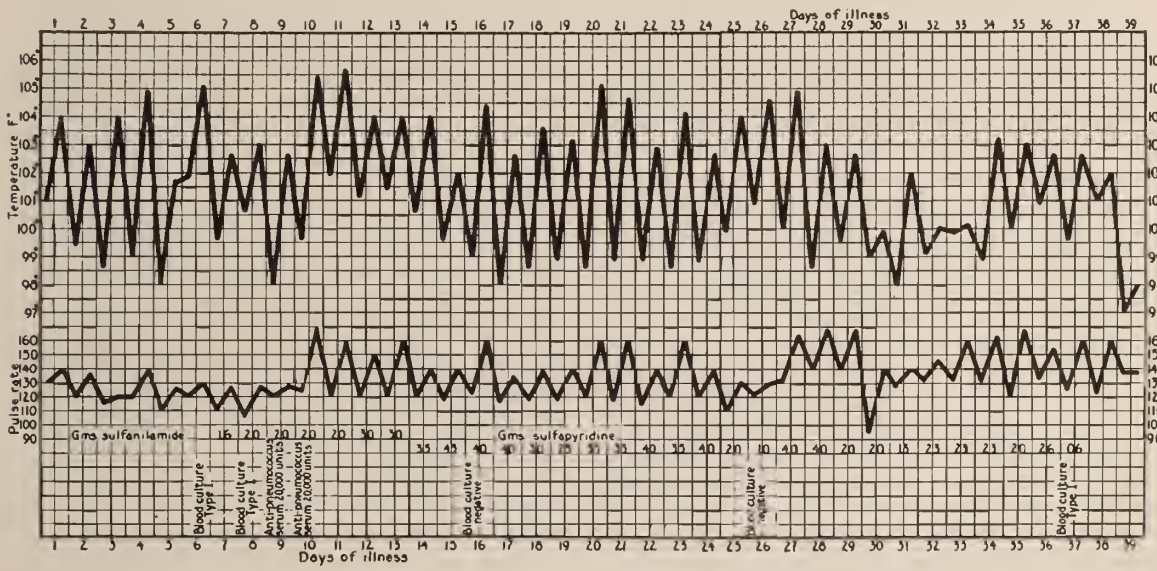


Fig. 1. Temperature and pulse record. Note influence of sulfapyridine on blood cultures from the 15th to 26th day of illness.

28; the blood pressure 90 systolic, 54 diastolic. The head, neck, ears, eyes, nose and throat appeared unchanged. The left chest lagged slightly upon inspiration. The apex beat was visible and palpable in the fourth interspace and within the midclavicular line. The left heart border was within normal limits. The right heart border extended 1 cm. beyond the sternal margin. The rate was rapid, the rhythm regular, tones of good quality and no definite murmurs audible. Anteriorly the fremitus, resonance and breath sounds were equal bilaterally; many crepitant rales were heard on both sides. Posteriorly there was a marked diminution of fremitus from the vertebral column laterally to the left for 6 cm. This area, extending from the 3rd to the 10th dorsal vertebrae, was dull to percussion, and breath sounds distant. Many crepitant rales were present on both sides. The abdomen was scaphoid; the liver, spleen and kidneys were not palpable. The extremities and reflexes were normal.

The urine had no albumin or sugar and a specific gravity of 1.015; the microscopic findings negative. The red blood count was 3,999,000; the white blood count 13,000 and the hemoglobin 80; differential count 86 per cent. polymorphonuclear leukocytes and 14 per cent lymphocytes. The non-protein nitrogen of blood was 30 mg. per cent. A stereoscopic x-ray film of the chest revealed a left-sided mediastinal empyema and an infiltration in the right second interspace.

On the following day, a diagnostic pleural puncture was performed and 10 cc. of thick green pus was withdrawn. Direct smear and culture revealed pneumococci. Open drainage was obtained by removing three cm. of the 6th rib. Subsequently pus from the entire cavity was evacuated. However, the patient continued to have an extremely septic course with almost daily chills. On January 14 a blood culture revealed a Type 1 pneumococcus. This was confirmed by another positive blood culture two days later. On January 17, 20,000 units of antipneumococcus Type 1 serum was administered and on the following day another 20,000 units. The patient had chills, marked dyspnea, increase and irregularity of pulse following the serum, but no marked change in the blood pressure. No marked clinical improvement was noted.

Sulfanilamide therapy was started on January 13. The daily dividend doses ranged from 0.8 gm. to 3.0 gms. The maximum sulfanilamide concentration obtained was 5.5 per cent. On January 22 sulfapyridine was substituted for the sulfanilamide and it was administered in daily divided doses as follows:—4.5, 4.0, 3.0, 2.5, 3,5, 4.0, 4.0 and 3.5 gms.

Subsequent doses were 4.5, 4.0, 2.0, 1.5, 1.3, 2.3, 2.3, 2.0 and 2.6 gms. It was discontinued on February 14. Blood cultures drawn January 24 and February 3 were negative. A culture drawn on February 14 revealed a Type 1 pneumococcus. The reactions noted during this intensive course of therapy were nausea, vomiting and a ringing and beating sensation in the head. The clinical course, fever, pulse rate were unaltered during the bacterial free period and during the sulfapyridine therapy (chart 1).

On January 21, the patient complained of a sharp pain in her right chest; two days later she began to expectorate a bloody type of sputum which persisted at various intervals until her death. She also complained of pains in her ankles, knees and hips. Her pulse was exceedingly rapid and ranged from 140-170 during the entire course. Repeated examinations of the heart did not reveal any marked change in the character of the heart tones and no murmurs were audible. An electrocardiogram taken on February 6 revealed a sinus tachycardia, marked right axis deviation and myocardial damage. X-Ray films of the pelvis were negative. An x-ray film of the chest taken on February 6 showed the presence of cloudiness that was interpreted as congestion in both lungs.

Fifteen blood counts ranged from 3,440,000 R.B.C.; 13000 to 30,650 W.B.C; 73-84 Hemoglobin (Sahli); and the differential 80 polymorphonuclears to 92; 8-20 lymphocytes. On February 15, the sixteenth blood count showed the first marked variation—the red blood count 2,940,000; white blood count 24,700; and the hemoglobin 59 Sahli. Twenty-six small transfusions were administered while in the hospital, the average amount being 65 cc., the total 1700 cc. She was also given 10 mg. of thiamin chloride and 50 mg. of cevitamic acid daily.

On February 15 she became drowsy, involuntary, more dyspneic and cyanotic. The temperature began to drop to subnormal and the following day she died. Autopsy findings were as follows:

The lungs were bound down by firm, fibrous adhesions. No areas of encapsulated fluid or pus in the pleural cavities or mediastinum were found. The pericardial sac contained 200 cc. of a clear straw colored fluid. The heart was dilated, especially the right ventricle. The myocardium was soft and flabby and of a slight brown color. The pulmonary artery and the pulmonic valves were unchanged. One leaflet of the tricuspid valve was covered with a large soft friable fungating mass of organizing fibrin and blood that measured 4.5x3.5x2 cm. The other leaflets of the tricuspid valve and the auricular endocardium presented several smaller vegetations. The aorta, aortic valves, mitral valves, chordae tendinae and papillary muscles were unchanged.

The right lung revealed several moderately soft purple areas projecting above the dull pleura. These areas were firm and on section consisted of multiple hemorrhagic infarcts of varying age. The color ranged from a deep red to purple; the consistency variable. Within the oldest infarcts were two anemic areas which were yellowish white in color and raised above the surface. The opposite lung was crepitant, reddish brown in color; no infarcts were noted.

In microscopic sections, marked hemorrhagic extravasation was noted in the right lung. The alveoli were filled with large numbers of red blood cells and blood pigment. In regions of the small bronchi the acini were filled with polymorphonuclear leukocytes and lymphocytes as well as red blood cells. Another necrotic portion stained poorly throughout; the alveoli were entirely necrotic as was the interstitial tissue and smaller bronchi typical of anemic necrosis. The myocardium revealed marked fragmentation of the muscle. No focal accumulation of cells was noted. The kidneys presented considerable tubular degeneration, but no marked changes in the glomeruli, increased vascularity and dilatation of the capillaries, but no bacterial emboli were noted. Type 1 pneumococcus was cultivated from the vegetation on the tricuspid valve.

SUMMARY

An instance is reported of acute thromboulcerative endocarditis of the tricuspid valve due to Type 1 pneumococcus complicating pneumonia and mediastinal empyema. Sulfapyridine temporarily cleared the blood stream of the organisms but did not prevent the fatal outcome.

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THE PRACTICAL AND ECONOMIC PHASES OF X-RAY AND RADIUM THERAPY

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The first duty of every physician is to make as careful and complete a diagnosis as is possible by all of the means that the circumstances will permit him to use in that particular case. Having conscientiously made the diagnosis, the doctor's next immediate duty is to plan and inaugurate the best and most desirable form of treatment that the circumstances will permit being used.

If the patient may be best restored to health by internal medication, that form of treatment should be used. If surgery appears to be the best treatment to use, surgical treatment should be carried out. If some form of irradiation therapy offers the best means of treating the case, then irradiation should be used. In many cases some combination of these various forms of treatment is best.

Where the physician is not properly equipped by training and experience or where he lacks the proper physical apparatus to render any treatment that the patient should have, it is his duty to so inform the patient and to arrange to have some other physician render that particular treatment needed. In such cases the physician first on the case retains control of the patient except as to the particular treatment to be rendered by the other physician called in. Right here is a somewhat delicate point: the second physician called in should have full authority to administer the special treatment or treatments that he is to give without interference by the physician in charge of the case. This may seem to be a simple matter but it is not; it is a very important matter. The physician rendering the special treatments is better qualified to decide the technic and the number of treatments to be given.

To illustrate this point I can name many instances similar to this one: Seven years ago a physician sent one of the University Professors to me for treatment for hyperthyroidism. After I had given the professor three doses of x-ray, the referring physician called up and said "I have decided not to give the professor any more x-ray treatment now, I don't want to bring on a condition of hypothyroidism and then have to be feeding him thyroid tablets the rest of his life." Well, of course, the professor went on with his toxic goiter conditions about the same as before, until he finally decided to make a change of physicians, and he selected another physician with better judgment and ethical sense, who again referred the professor back to me for further treatments. After a course of nine more doses of x-ray the patient was brought back to a normal metabolic activity and has remained in apparently perfect health ever since with no further medication nor treatment of any kind.

In planning the treatment of any patient it is necessary to first of all decide the most efficient and desirable treatment or combination of treatments to be used. In doing this the first consideration is, of course, the patient's safety and health and future welfare. The other factors that enter into the consideration of treatment are the economical status of the patient and the patient's social and business status and responsibilities. In this connection, it is perfectly proper to state that, for most of those conditions that may be successfully treated by either x-ray, radium, or other forms of radiant energy which properly fall under the sphere of the radiologist's specialty, the treatments may be carried on without the patient being hospitalized or even having to discontinue his or her daily business activities. Therefore, if radiologic treatments of any form offer as good a chance for clearing up the conditions as may be obtained by any other form of treatment, such as medical, surgical, or climatic treatment, the radiological treatments would, in most cases, be desirable because such treatments could be carried on usually with less expense and without the patient having to change his business or social routine. To illustrate, hyperthy-

roidism may in most cases be successfully treated with the patient pursuing his regular routine. The obvious saving in hospital expense is clear, and, with the prevailing charges for both surgical and radiological treatments, the patient would save considerable money by being treated by x-ray. Another illustration is the matter of climatic change for such things as chronic nasal accessory sinus conditions, etc.; many of these cases may be apparently cured by sending them to certain high and suitable climates, such as that of Colorado or similar climatic areas. On the other hand, many of these cases may be gotten in just as good condition by fairly inexpensive radiological treatments, consisting of mild doses of x-ray, cold quartz ultraviolet therapy, etc., and continue in their daily vocational activities. If these people are so situated economically that they cannot spend a part of the year in those places and climates where they are free from nasal sinus trouble, the wisdom of their being treated radiologically is evident. Certain skin lesions can be used to illustrate the same idea. And, again, while some of the skin lesions may be treated successfully by either radiation alone or by medical applications alone, the radiological treatments may be preferable because they do not involve the covering of the skin with any unsightly or disagreeable medical applications. Furthermore, certain skin lesions, such as verruca, are permanently cured by x-ray therapy, while they are prone to return following any other form of treatment.

In those serious malignant cases that need a combination of severe irradiation and surgery, such as breast cancer cases, it is almost always best to give the patient the irradiation therapy first and immediately follow this up with the surgical removal of the breast. There are two good reasons for this: First of all, the end-results in the percentage of permanent cures are considerably better with this plan than have been obtained by operating first and using irradiation therapy afterward. Secondly, it is a conservation of the patient's time and the discomfort, etc., of convalescence is diminished, because the surgical operation necessarily keeps the patient laid up for from one to three weeks, and, if the irradiation therapy is done immediately before the surgical operation, much of the skin surface most seriously damaged by the irradiation over the breast is removed at the time of the operation, and the patient not only suffers less local pain and discomfort, but recovers from the effects of radiation while the surgical wounds are healing. Furthermore, nine years of experience have taught us that, contrary to the old time notion that surgical wounds do not heal well after irradiation, we have proven in over forty cases that healing is just as prompt and perfect if such cases are immediately operated upon after the irradiation therapy is finished, as occurs where no irradiation therapy has been done. The secret in the successful healing is that the operation should be done *immediately* after the treatments, and not wait until the irradiation therapy has produced the maximum reaction.

We physicians need to constantly bear in mind that the patient's health, which, of course, includes his physical and mental conditions, should be our prime consideration in our dealings with that patient. It is a bad combination, even if we completely restore a patient to physical health, to leave that person financially sick. If the patient has a greater expense than he can take care of with reasonable effort after he has regained his health, that expense may be the cause of other serious mental if not physical disability. It is an altogether too common custom these days for members of the medical profession to send their patients to the hospital. Doctors send their patients to hospitals unnecessarily for any one of the following reasons:

1. They send their patients "to the hospital for observation." While some cases can best be studied at the hospital, this practice is sometimes overdone, thus increasing the "cost of medical care" to the patient.

2. For rather trivial forms of illness or injury that might be just as well treated at the patient's home, or at the doctor's office, and thus save hospital expense to the patient.

3. Some of the doctors may even be prompted to try to have a better showing of the extent of their practice, etc., by a desire to have "a larger number of patients at the hospital than Dr. ———— has."

This unnecessary hospitalization of patients adds very greatly to the patient's expense in case of injury or illness. Oftentimes the hospital bill is greater than the physician's bill, and without any added benefit to the patient, who might just as well have been examined and treated at his

home, or the doctor's office, without hospitalization.

Another factor that is lost sight of by some members of the medical profession is that they usually can keep a more close and practical connection with many of their patients by keeping the patient at home than they can maintain after the patient is once hospitalized. In the economic and competitive struggles of hospitals and hospital staffs, the patients are all too often mere "items" in the business activities of the hospital and of the favored members of the hospital staff. The patient is subjected to much unnecessary expense and, to the more sensitive patient, there may be annoying publicity of his various illnesses and accidents.

Fully realizing that the hospital practice and associations of the physician tend to bring him more in contact with his fellow physicians and thus help him to maintain in general a more "up to date" status of medical and surgical facts and procedures, it should also be borne in mind that "we are all human" and, if tired or desirous of "getting away from" our medical practice for recreational or other purposes, we may skip many details as to diagnosis and care of the patient by telling the interns or nurses to do certain things which, if conscientiously done by the doctor himself, would be better for both the doctor and his patient. We have other phases of unnecessary hospitalization of patients which will occur to the minds of the more thoughtful members of the medical profession.

Reverting to the matter of treating those patients who may be best treated by irradiation therapy, we at once discover a prevailing weakness in the present day procedures in this line in the average general hospital. This weakness lies in the fact that it is the prevailing practice for these hospitals to run their radiological departments as a revenue-producing part of the hospital activities, and thus make up from the radiological department deficits that occur in certain other of that hospital's activities. This practice leads the hospital to hire the radiologist on a salary, and at once put him on "quantity production"; the hospital authorities usually pay more attention to "the number of patients x-rayed" than they do to the accuracy of the work done. Furthermore, the average hospital pays its radiologist a smaller salary than a competent radiologist can earn in the legitimate private practice of his specialty. The hospital does this in order that they may make a profit on the radiologist's work done there. The end-results are one of two things—either the radiologist who takes such a position is more or less inexperienced or incompetent, or he would not accept the salary for which he works, or he makes private reservations of his time and abilities to be used outside of his hospital activities for his own benefit. Under the first proposition, the patients of that hospital are not getting as good irradiation treatments as a more competent and experienced irradiation therapist would render to them. Under the second postulate above mentioned, the ordinary hospital patients are "run through" in a careless and perfunctory manner, and thus oftentimes receive improper or inadequate irradiation therapy. Of course, the more thoughtful and observing patients often detect this state of things and eventually seek treatment from a competent radiologist in private practice; in such cases, whatever money they have paid for the "hospitalization," or hospital services, has been practically wasted and is merely another item added to "the high cost of medical care."

While surgical technic is now well developed, and the morbidity and mortality rates decreased in proportion, irradiation therapy, when given by properly qualified and recognized radiologists, has lower morbidity and mortality rates in treating properly selected cases than does the surgery.

Having briefly shown the wisdom of avoiding unnecessary hospitalization of our patients, and having spoken in brief of the comparative values of irradiation therapy and of surgery in certain cases and conditions, we should, of course, give some consideration to the comparison of irradiation therapy with general medical therapeutics. In my opinion, x-ray or radium treatments do not in any way ever stimulate normal cell activity nor do they stimulate normal functional activity of any part or organ. On the other hand, the end-result of any dose of either x-ray irradiation or radium irradiation is inhibiting to both normal cell and normal organic functional activities rather than stimulating. Because of this, certain systemic diseases, such as Hodgkin's disease, myelogenous leukemia, and in the hang-over coughs following certain acute infectious diseases, such as measles, scarlet fever and pertussis, especially the last named disease.

in which the lymphatic glands of the mediastinum and pulmonary hilar areas become chronically engorged with an abnormally large number of lymphocytic cells, x-ray therapy is usually much more efficient and therefore more desirable than drugs or other remedial efforts. Of course, in the Hodgkin's and leukemic cases, the end-results are usually fatal, but the x-ray therapy, if properly used, prolongs the patient's life from one to three years and keeps the patient in much better physical condition and comfort. In the last named cases of complicating coughs following the infectious diseases, a few light doses of x-ray promptly dissipate the lymph congestion and effect a permanent cure of the conditions.

In our experience the following diseased conditions have been satisfactorily treated by x-ray or by radium, or in some cases by these two forms of irradiation therapy combined. In order to make this as concise and at the same time as comprehensive as possible, I have arranged these various lesions in alphabetical order and placed certain key figures after each named lesion. "1" indicates that that lesion often cannot be permanently cured without the use of x-rays or radium. "2" indicates that irradiation is the most useful, if not the only useful treatment. "4" indicates that x-ray usually gives the best results but that there are other forms of fairly successful treatment. "5" indicates those conditions that are usually best treated with radium. "6" indicates the conditions that are best treated by first, irradiation therapy, and the follow-up surgical removal of remaining primary tumor masses. "7" indicates the x-ray treatment combined with medicimal treatment is usually best.

Acne varioloformis 4
Acne vulgaris 4
Actinomycosis 6
Angioma 5
Blastomycosis 7
Bromidrosis (Hyperidrosis) 7
Callositas 2
Carbunculus 2
Carcinoma 6, 1
Cheilitis 2
Chromidrosis (Hyperidrosis) 7
Cornu 4
Dermatitis 4
Eczema 4
Epithelioma 2, 1
Fibroma 2
Favus 2
Furunculosis 4
Hodgkin's Disease 7
Hyperidrosis 7
Hyperthyroidism 2
Hypertension 2
Keloids 2, 1
Keratosis 1
Kraurosis vulvae 1
Kraurosis ani 1
Leukoplakia 5
Lupus vulgaris 4
Lymphadenitis 4
Onychomycosis 7
Paronychia 7
Pompholyx 4
Pruritis 1
Rhinoscleroma 1
Sarcoma 6, 1
Sinusitis of nasal accessory sinuses 7
Sexual Sterilization 4
Sycosis 4
Tinea barbae 2
Tinea capitis 2
Tubercular glands 2
Verruca—all forms 1

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APPENDICITIS: A REVIEW OF 3,407 CASES*

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This clinical study was prompted by the fact that a gradual rise in the mortality rate of appendicitis was evident during the years of 1932, 1933 and 1934. In the gross analysis of this review one naturally considers the amebic dysentery epidemic occurring during that time and the possible influence it may have had on the rate of mortality of appendicitis if the two diseases were present in the same patient. Other interesting phases were considered in this problem.

To get a better perspective of this summary, cases of appendicitis were studied covering a substantial period before and after the epidemic.

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The histories studied were of patients that had no other surgery performed during appendectomy and included the period from 1929 to 1937 inclusive.

The patients were classified in accordance with the operative and pathologic findings as:

(1) chronic
(2) acute
(3) with abscess
(4) with peritonitis

The patients studied were operated upon at a private hospital of a general type which is comprised of an attending staff and a visiting staff. We consider our institution as one of the better hospitals in Chicago of its type.

In the first table we have classified the cases as to general distribution in relation to the amebic dysentery epidemic.

Table 1 shows the distribution of cases reviewed from 1929 to 1937 inclusive. Of the 3,407 cases studied, 2,321 were female and 1,086 were male. In this group there were 96 cases of appendicitis with abscess and 72 cases with peritonitis.

In the next table we show the number of cases of amebiasis in association with appendicitis.

From 1929 to 1937 there were 77 cases of diarrhea or an incidence of 2.26 per cent. associated with appendicitis. In the analysis of the stools seven cases were reported as suspects for amebas, 16 were positive for amebas and 30 stools were negative. The incidence of amebiasis associated with appendicitis in the period 1929 to 1937, inclusive, is .04 per cent., while if only the epidemic years of 1933 and 1934 are taken in consideration the incidence rises to 1.91 per cent.

We then became interested in correlating the pathologic findings of the appendix in relation to amebiasis. In 1933 there were 36 cases with a diarrhea, 34 of which were operated upon. Of these, three cases had positive amebas demonstrated in the microscopic examination of the appendix after operation, otherwise negative for any pathological findings; 15 were reported as phlegmonous and 16 showed mild fibrosis.

In 1934, 21 cases with a diarrhea were operated upon of which six were reported as phlegmonous, 14 showed no changes and one was reported as catarrhal. It is interesting to note that a left-sided pain was present in nine cases in 1933 and in six cases in 1934; in both instances the stools were positive for the ameba. There was no record of any proctoscopic examinations made in any patient which were recorded as having a diarrhea or a positive stool previous to operative procedure.

The leucocyte counts paralleled the elevated temperature in all patients who had a diarrhea or positive stool findings.

In Table 3 we attempted to outline briefly the mortality percentages.

Between the years 1929 and 1937 there were 67 deaths associated with appendical surgery in 3,407 patients or a mortality of 1.96 per cent. In the years 1933 and 1934 the mortality is 2.21 per cent. and 3.67 per cent. respectively, an increase of .25 per cent. and 1.71 per cent. respectively. From the results obtained thus far it was evident that the amebic dysentery epidemic was directly responsible for the increase in the mortality rate in the years of 1933 and 1934. We therefore made a careful survey of the mortalities that may have been directly ascribed to complications arising from amebiasis.

In Table 4 we list the relationship between complications in appendectomies with amebiasis.

Note that in five patients with positive stools for amebas in 1933, there were two patients that met with complications. In 1934 in eight patients with positive stools, six met with complications that terminated in death for four patients. The percentage of mortality that is ascribed as due to amebiasis is 1.46 per cent. of the appendical mortality of 3.67 per cent. for the same year; in other words, 39.7 per cent. of the general appendicial mortality for the year 1934 was due to complications of amebiasis.

It is interesting to observe the elimination of the complication of amebiasis as a factor in the mortality rate in the years that follow the year of epidemic. In the course of our analysis we again encountered the question of catharsis as a factor in the mortality rate of appendicitis.

During the years of 1929 to 1937 9.6 per cent. of all cases operated upon received a laxative or

cathartic before exploration. In the same interval the mortality was 67 in 3,407 appendectomies. The mortality which may be ascribed as influenced or due to catharsis in the same period was 23 or 33.5 per cent.

One should stress the point in this consideration that in the calculations of cathartic mortality patients which gave a history of vomiting from the catharsis were excluded. Only cases in which a clear cut history of catharsis was given were considered in the tabulation.

Another interesting phase of this review is a comparative analysis of the division of responsibility of the cases treated. Briefly, our hospital is comprised of a visiting staff of whom there are about 230, and an attending staff of 85. The attending staff treated 1,945 patients while the visiting staff attended 1,462 patients in the period 1929 to 1937 inclusive. In other words, 42.9 per cent. of the 3,407 cases were operated upon by the visiting staff. The total deaths during this period were 67 of which 35 are chargeable to the attending staff and 32 to the visiting staff. It is interesting to point out that the mortality rate of the patients of the attending staff was 1.79 per cent. and that of the visiting staff was 2.12 per cent. as compared with the total appendicial mortality of 1.96 per cent. We do not mean to imply that the attending staff necessarily does more careful work or that more attention is given to the patients of the attending staff by the nursing and intern staff. It may mean, however, that the attending staff may have had the opportunity to admit very acute cases to the hospital at an earlier stage of the disease and therefore had more chance of recovery, or that the general run of the cases operated upon by the visiting staff may have been more serious.

TABLE 1
DISTRIBUTION OF CASES OF APPENDICITIS BEFORE, DURING AND AFTER AMBERIC DYSENTERY EPIDEMIC

	Chronic		Acute		Abscess		Peritonitis		Total	
Year	F	M	F	M	F	M	F	M	F	M
1929	152	43	83	62	4	8	3	3	242	116
1930	167	42	99	84	2	3	3	2	271	131
1931	189	40	82	78	6	3	4	4	281	125
1932	201	82	112	75	9	3	6	3	328	163
1933	174	54	105	66	3	2	2	0	284	122
1934	105	40	56	41	12	8	6	4	179	93
1935	184	64	82	65	12	7	9	7	287	143
1936	118	44	80	21	4	3	5	2	207	70
1937	160	66	72	51	4	3	6	3	242	123
GRAND TOTAL									2,321	1,086

TABLE 2
INCIDENCE OF AMEBIASIS ASSOCIATED WITH APPENDICITIS AND ASSOCIATED SYMPTOMATOLOGY

	No. of	No. of	Ameba in Stools			Micros. of Appendix			Pain		Temp.		Leucocytes	
Date	Appendect.	Diarrheas	+	—	?	Ameba	Phleg.	Cat.	R.L.Q.	L.L.Q.	102+	99+	12M+	12M—
1929	358	3		3			1	2	2	1	1	2	1	2
1930	402	1		1				1		1	1		1	
1931	406	0						1		1A	1A	2	1A	2
1932	491	3	1A	2			2	16	20	9A	6A	30	21	15
1933	406	36	5A	3	7	3	15	14	15	6A	5C	8	14	7
1934	272	21	8A	13		1	6				8A			
1935	430	6	1	5			2	4	4	2		6	1A	5
1936	277	4	1	3				4	1	3	1	3	1A	3
1937	365	3												
Total	3,407	77	16	30	7	4								

TABLE 3
SHOWING YEARLY MORTALITY OF APPENDICITIS AND RATE OF PERCENTAGE

	Chronic		Acute		Abscess		Peritonitis		Total	Per Cent
Year	F	M	F	M	F	M	F	M	Deaths	Mortality
1929	0	0		2	1	1	1	1	6	1.67
1930		1	2	2		1	1	1	8	1.99
1931	1		1		2	1	2		7	1.73
1932		1	2		3	1	2	1	10	2.03
1933	3		3	1	1		1		9	2.21
1934	1			1	4	1	2	1	10	3.67
1935					1		3	1	5	1.15
1936							3	1	4	1.44
1937	1	1	1		1	1	2	1	8	2.19

TABLE 4

INCIDENCE OF COMPLICATIONS IN APPENDECTOMIES WITH AMEBIASIS

Year	Number of Appendect.	Stools positive for Amebas	No. of complications	No. of Deaths	Per cent Mortality	Appendical % Mortality
1932	491	1	0	0	0	2.03
1933	406	5	2	2	.49	2.21
1934	272	8	6	4	1.46	3.67
1935	430	1	1	1	.23	1.15
1936	277	1	1	0	0	0

TABLE 5

INCIDENCE OF APPENDICAL MORTALITY AS DUE TO CATHARSIS

Year	No. of Append.	No. of Catharsis	Per cent. on Catharsis	Total Deaths	Catharsis Mortality	Per cent Mortality
1929	358	37	10.3	6	2	33.3
1930	402	21	5.2	8	2	25.0
1931	406	30	7.3	7	1	14.3
1932	491	42	8.5	10	4	40.0
1933	406	38	9.3	9	4	44.4
1934	272	29	10.7	10	3	30.0
1935	430	45	10.4	5	2	40.0
1936	277	34	12.3	4	1	25.0
1937	365	46	12.6	8	4	50.0
Total	3,407			67	23	

TABLE 6

SHOWING MORTALITY RATE OF APPENDECTOMIES DONE BY ATTENDING AND VISITING STAFF

Year	Total No. Appendect.	Per cent Mortality	Appendect. by Att. Staff	No of Deaths	Per cent Mortality	Appendect. by Visit. Staff	No. of Deaths	Per cent Mortality
1929	358	1.67	206	2	.97	152	4	2.63
1930	402	1.99	233	4	1.71	169	4	2.36
1931	406	1.73	246	4	1.62	160	3	1.87
1932	491	2.03	288	6	2.08	203	4	1.97
1933	406	2.21	208	5	2.40	198	4	2.02
1934	272	3.67	154	6	3.89	118	4	3.39
1935	430	1.15	237	3	1.27	193	2	1.03
1936	277	1.44	157	3	1.39	149	5	3.35
1937	365	2.19	216	2	1.27	120	2	1.66
Summary	3,407	1.96	1,945	35	1.79	1,462	32	2.12

FAMOUS MADCAPS OF HISTORY

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It is well said that the title is often the most difficult part of an address to write, and I must confess that I have, in this instance at least, found that to be the case. Many formal and more dignified titles might have been found, but they might have called for lengthy explanation and perhaps then would not have been more accurate than is the title which I have adopted, namely, Famous Madcaps of History. Some of the saints and sinners whom I propose to discuss briefly this evening were recognized even in their own time as being, as we should say, psychotic; others, however, on account of the beliefs prevalent at the time were looked upon rather as specially favored by supernatural powers and not as suffering from mental disorder. The word "madcap," however, is one which conveys a meaning which is certainly not ordinarily applicable to some of the subjects of the evening. The term is generally defined as "a person who acts in a rash or giddy manner." However, reference to the Oxford Dictionary will indicate that in earlier times the word was used to denote a mad man or a maniac; it then derived the meaning of one who acts like a maniac, that is, a reckless or wildly impulsive person. The general sense conveyed, however, by the word, is one of lack of mental balance, of deviation from

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the normal, and it is this general idea which I intended to convey in selecting the title.

It is not my purpose this evening to present detailed biographies of any historical worthies; it is rather to point out how in retrospect we may look upon the mental processes of persons who for one reason or another have left their mark upon history. In some instances, without doubt, either because of their mental peculiarities or in spite of them, some of these persons accomplished vast good for the human race, while others wrought much evil. In still other cases the estimate of the activities of the individual will depend very much upon the point of view of the twentieth century spectator. By taking certain outstanding examples from various historical epochs we can likewise indicate how the views relative to mental disorder have changed through the years, with changing cultures. Attention may be called to the fact that all the personages discussed have been dead for a considerable period of time. For obvious reasons discussion of living persons is not wise in a public lecture and, furthermore, strange as it may seem, it is sometimes more difficult to obtain the facts concerning a person during his lifetime particularly if he occupies high position, than after his death, when many facts not previously known may become available for historical records; that is, unless one has the opportunity during his lifetime to make a personal examination!

An interest in biography has apparently been an almost universal human trait since man became relatively civilized. There has always existed interest not only in the overt acts and the more obvious activities of historical personages, but also in speculating on their motives. The mention of such biographers of ancient times as Xenophon, Plutarch and Suetonius is enough to indicate the antiquity of a general interest in biography. Generally, too, the more intimate these biographies have been, the more interesting they have been to the public, as witness Samuel Pepys and our own Walter Winchell. It is well, however, to bear in mind in discussing motives, mental mechanisms, and particularly possible mental disorders of characters now dead, that one cannot be dogmatic. Diagnoses *à distance* are rather dangerous things, whether the distance be spatial or temporal. It is the common experience both in the court-room and in the staff conferences of mental hospitals to find occasional disagreement, mild though it may be, concerning the mental characteristics of the patient who is present in the flesh, who is cooperative, willing to discuss his case with the doctors, and to be examined physically. If such be the case why is not the danger all the greater that there will be disagreement and possibly gross misunderstanding in the case of a person who has been dead for one hundred or two thousand years? Again, we must bear in mind the fact that a difference in time and place is bound to mean a difference in attitude, in the interpretation of conduct, of words, and of the meaning attributed to those words, to the background which goes to mean so much in our interpretation. Further, we must remember that often the accounts of these persons have been written by an untrained reporter, or may even have been handed down for a considerable period by word of mouth before they were committed to writing. The manner in which rumor grows is familiar to us all. One is reminded, for example, of the story of George Washington and the cherry tree, a story probably entirely apocryphal, which appeared in print within a very short time after that great man's death. A wealth of rumors clings about a prominent person even during his life, and the snowball continues to grow after his death, that is if he is remembered at all!

Hardly over one hundred years ago, or, to be exact, in 1836, Dr. Francois Lelut, a prominent psychiatrist of his day, who had been a physician on the staffs of the two famous Parisian mental hospitals, the Salpêtrière and the Bicêtre, wrote a volume entitled The Demon of Socrates,[1] a very scholarly work, in which he traced from the writings of Plato and of other biographers the peculiar mental phenomena exhibited by that great and good man. Since that time a large literature has developed dealing with genius and the peculiarities of geniuses. This literature has unquestionably influenced the trend of biographical writings and, as you are aware, the late Gamaliel Bradford referred to his particular style of biographical writing as psychography, that is, the description of the motives and emo-

1. "Du Démon de Socrate, spécimen d'une application de la Science Psychologique à celle de l'Histoire." Paris, 1836.

tions of the person about whom he wrote. A tremendous number of characters have been discussed and many volumes have been written to the effect that genius and psychosis are very closely connected, if, indeed, genius be not a form of psychosis. Parenthetically it may be added that much has been written likewise on what may be termed "mass" delusions or psychoses, such as the Children's Crusade, the Dancing Manias of the Middle Ages, and the Mississippi Bubble; perhaps a similar study might well be made of the boom of 1929! Some of the writers on genius have appeared very seriously to stretch the point, and to paint genius as a form of mental disorder; one thinks in this connection of Max Nordau and of Cesare Lombroso. They are perhaps not particularly original in this matter, since so ancient a writer as Seneca said something to the effect that no great genius could exist without a mixture of dementia. It is a fact, of course, that geniuses are peculiar persons; that is true by definition. The sound business man, the man of good judgment and common sense, of conservatism, of moderate emotions, in short, the average normal man, is like a majority of his fellows. He is not touched with the Promethean fire, he is not set apart by special gifts; the individual with special gifts is, in other words, abnormal, but that is quite different from saying that he is psychotic or mentally deranged. There certainly have been many geniuses who by any sort of standards either today or in their own time would have to be looked upon as well balanced individuals, as meeting Cabanès' ideal, an alliance of good sense with inspiration. Shakespeare is the most familiar of this group; he and Leonardo da Vinci, Pasteur, Cuvier, Leibnitz, and possibly even Voltaire (although not all agree on the latter) were what one would term at least syntonic; they were looked on in their day, as in ours, as anything but "queer." A genius is a man set apart by special, indeed extraordinary gifts; he differs from the common herd; he is not average or mediocre, and therefore, perforce, not "normal." By reason, however, of his superior intuition, his imaginative fire, his creative ability, his intellectual acuity, he is perhaps more subject to the possibility of mental disorder than is the more phlegmatic, realistic, normal man—just as special care must be taken of the highly trained racing horse, or some delicate piece of machinery. Many geniuses, especially some of the mystics, like Blake and Swedenborg, have lived so much in the world of phantasy that it was difficult or impossible for them to separate fancy from reality. It is this very ability to separate the two that constitutes realism, common sense, sound judgment, or sanity—call it what you will—and it is for this reason that many creators have been looked upon as peculiar or deranged. That at least they were different and far from the common run of mankind we can all agree. There are, of course, historical figures who are far from being geniuses—persons who were propelled by force of circumstances or by accident of birth into a situation in which they made history, although they were not possessed of any ability even suggesting genius. This has been true of a number of persons who have been leaders or who were in positions in which leadership was expected. The men who have achieved historical positions through their contributions to art, literature and philosophy probably number a larger share of the genius group than do those who have taken part in political activities.

Let us for our first consideration this evening go back in time to the rather early days of the Old Testament, and consider the interesting psychiatric case of King Saul. Saul evidently suffered from what we should call manic-depressive psychosis. He evidently had rather definite periods of depression when, as the Bible puts it, an "evil spirit of the Lord came upon him." His first contact with David, indeed, was on the occasion when the latter was called upon to play the harp before him in order to cure the King of his depression—probably the first example of musical therapy on record. This attempt is reported to have been successful; we are told that "Saul was refreshed and was well, and the evil spirit departed from him." Subsequently, however, David by a number of his military exploits, notably the killing of Goliath, attained great popularity with the people, so that on his return from this exploit the women sang that whereas Saul had slain his thousands, David had slain his tens of thousands. From this time Saul appears to have been extremely envious of David and to have desired to have him removed. Indeed, the next morning after this homecoming Saul had

developed another psychotic episode during which, in the words of the Bible, he "prophesied in the midst of the house." The word which is here translated "prophesied" is one which has the literal meaning of "bubbling," and thus may be taken to indicate overproduction, rambling or incoherence of speech. It was upon this occasion that Saul made his homicidal attack upon David by hurling the javelin at him while the latter was playing before him, an attack which fortunately was unsuccessful.

Saul's paranoid attitude towards David still continued and some time later on David found it necessary to escape from the court, this escape precipitating another psychotic episode during which Saul "stripped off his clothes, also, and prophesied before Samuel in like manner, and lay down naked all that day and all that night." David, realizing his danger, fled to the court of the King of Gath, but having some reason to doubt the good faith of that king, he pursued certain behavior which casts great light upon the attitude of the early Jews toward mental disorder. We are told that he "changed his behavior and feigned himself mad in their hands, and scrabbled on the doors of the gate, and let his spittle fall down upon his beard," whereupon the king said to his servants, "Have I need of mad men that ye have brought this fellow to play the mad man in my presence?" David was thereupon allowed to depart to the cave of Adullam. Apparently David, recognizing the fact that what we now term "mental disorder," was interpreted in those times as a direct visitation of God, realized that by appearing to be mad he would be taken to be under God's special protection. As a matter of fact, it would appear from the Biblical account that the courtiers of the king did not dare to approach David and were very glad to permit him to escape. This episode, as well as the description of King Saul's psychotic outbursts, casts considerable light upon the beliefs of the time. Subsequently Saul, owing to David's magnanimous attitude towards him, became friendly with David and continued so the rest of his life. It is doubtful whether Saul's consulting of the witch of Endor or his committing suicide during his last battle can be considered to be indicative of mental disorder. The belief in familiar spirits, as they are known, was common in those days, and it was quite natural that the king, realizing that he would be subjected to great indignities and probably to torture if captured, might prefer not to fall alive into the hands of the enemy. There seems no doubt that he had definite psychotic episodes of sudden onset and short duration, sometimes precipitated by painful situations, that he was highly irritable at times and depressed at others. It was extremely fortunate for the Jewish race that his homicidal attempts upon David were not successful, for although Saul furnished leadership to his people and accomplished much for the development of the people of Israel, David's genius as a leader was far greater. King Saul's case is particularly interesting because it is one of the earliest cases of psychosis recorded in any detail.

Let us now leave the Old Testament and come down to a period of time a little nearer the Christian era, another civilization, namely the Periclean Age of Greece, and consider the case of one of the greatest minds and spirits that ever lived, namely, Socrates. Socrates was one of the most influential thinkers of all time and a tremendous force for good, for sound thought, for philosophy, and for sound living; a man who had such a tremendous personal influence over those who came in contact with him that he was actually considered a menace to the state and was executed! The case of Socrates is a striking historical example of the suspicion and sometimes indeed the hatred felt by the mob for anything which may provoke thought and which may be superior ethically to its standards. Such episodes have occurred in many times and places and, unfortunately are not unknown even today. For the study of Socrates we are fortunate in having a large amount of contemporary writing, most notably in the dialogues of Plato. In these dialogues Socrates appears as a character, and as they were written contemporaneously they may be taken as substantially accurate, even though they may not reproduec the exact words of the great teacher. For our present purpose Socrates is likewise of interest on account of the study made by Dr. Lelut in 1836, a study which may be considered as the father of psychography. Socrates apparently had a decided reputation during his life for eccentricity, and was even irreverently called by Zeno the "clown of Athens." He is said to have worn the same robe in all

seasons, to have gone barefoot, and to have danced alone. He is reported on one occasion to have stood in a fixed position for hours, looking at the sun, finally withdrawing without paying any attention to those about him. At other times he would stop suddenly while walking and talking. Plato describes in the Symposium an occasion on which Socrates failed to appear when the banquet was about to begin. The servant sent to look for him reported, "There he is fixed and when I call to him he will not stir." Plato goes on to say, " 'Let him alone,' said my informant, 'he has a way of stopping anywhere and losing himself without any reason. I believe that he will soon appear. Do not therefore disturb him.' " As a matter of fact, when the banquet was about half over Socrates entered, making no explanation for his tardiness, and joined his companions at the feast. The peculiarity of Socrates which is most striking is the inner voice to which he listened so frequently and to which he referred as his "demon." In his Apology, that is, his defense before the jury which was trying him, he says, "You have heard me speak at sundry times and in divers places of an oracle or sign which comes to me and is the divinity which Meletus ridicules in the indictment. This sign, which is a kind of voice, first began to come to me when I was a child. It always forbids but never commands me to do anything which I am going to do. This is what deters me from being a politician." Later in the speech he says, "But the oracle made no sign or opposition, and yet I have often been stopped in the middle of a speech."

It must not be forgotten that Socrates lived at the time of the Delphic Oracle, and that there was a popular belief held by all educated men that the god under certain circumstances entered into the oracle and spoke through her. The belief by Socrates, therefore, that some mystical or supernatural agency was speaking to him, was not out of accord with the beliefs of the time and, therefore, cannot very properly be said to have been a delusion. It was perhaps nothing more than a graphic and vivid way of personalizing his superego. There is certainly no question that the demon of Socrates was a valuable guide to Socrates, that it acted always in a constructive manner, and although by modern standards we should consider that Socrates was hallucinated, it is certain that this phenomenon did not detract in any way from his value to the history of the world. Apparently, however, the presence of this demon did have a bearing on the attitude of the authorities at the time and on their bringing the charge that he was substituting a religion of demoniac mysticism for the state religion. Socrates, in addition to having one of the most powerful minds of all times, evidently had almost unlimited powers of concentration, and it is quite possible that his absences, or periods of marked preoccupation, were merely exaggerations of this concentration rather than definitely psychotic in nature.

Turning now from one of the best of men to one of the worst, let us consider briefly Caligula, one of the most notorious of that group of Roman emperors of the period about the beginning of the Christian era who set an example to the world in wickedness and cruelty, and in the misery that they brought upon their people. There was so much sexual irregularity among the Roman emperors and their wives that one must be extremely cautous in laying very much at the door of heredity, since the paternity of some of these monsters was decidedly doubtful. Caligula's father, Germanicus, was a general who was much loved by the troops and by the whole Roman people. Germanicus was adopted by his uncle Tiberius, and upon the latter's death Caligula secured the power. He is described as having been hideous in appearance, poorly formed, extremely hirsute, and to have deliberately practiced the making of grimaces in order to render his appearance more fearful. He was, says Suetonius, "crazy both in body and mind, being subject when a boy to the falling sickness." There is some suggestion, too, that he had at least minor epileptic attacks during his whole life. Some of his peculiarities were attributed contemporaneously to the administration by his wife of a love potion which had "thrown him into a frenzy." At the very outset of his reign he acquired considerable favorable attention from the public by his magnificent expenditures, by his generousness in giving public entertainment, by completing some of the unfinished public works of his predecessors, and in order to surpass others he even built the largest and longest pontoon bridge of its time. His prodigality continued, however, so that he spent all of the

money amassed by his predecessor Tiberius, levied heavy taxes, plundered the wealthy and even operated brothels and gaming establishments to bring him additional revenue. Such was his pathological megalomania that he is said to have removed the heads from the busts of some of the gods, including Jupiter himself, and to have substituted his own. He talked seriously of banning the words of Homer, Virgil and Livy, and he even threatened to abolish the entire legal profession in order to make himself the sole arbiter on matters of law. Although contemptuous of the writings and the literary accomplishments of others, he studied oratory, and at least fancied himself to be an orator of very considerable accomplishment. He was a great patron of the theatre, considering himself an actor of parts, and he showed great favoritism towards the charioteers and actors. It is of Caligula that the tale is told that he thought seriously of making his favorite horse a consul: as a matter of fact, he provided this animal with an ivory manger and a house with a retinue of slaves and fine furniture. He pictured himself as outstanding indeed in every field, and at times would take the lead of his army and go on expeditions against really imaginary forces in order to demonstrate his prowess.

One interesting anecdote of rather striking psycho-analytic significance is to the effect that on one New Year's day Caligula served notice that he would receive gifts, and he stood in the vestibule of his house while the gifts were thrown before him. "At last," says Suetonius, "being seized with an invincible desire of feeling money, taking off his slippers he repeatedly walked over the great heaps of gold coins spread upon the spacious floor and then laying himself down, rolled his whole body in gold over and over again." The characteristic for which Caligula has become most notorious, however, is his very striking sadism, the desire to inflict and to witness physical suffering and death. His barbarity was unparalleled even for those barbaric times. He sent criminals to the beasts, killed persons without any provocation, and then ordered their parents to come and dine with him and to appear merry. He contemplated seriously the possibility of annihilating a whole legion of the army which had mutinied at the time of the death of Augustus, and complained that no calamities had befallen the Roman people. This Emperor's sexual impulses were as unrestrained as were his homicidal ones. There is relatively little in the accounts to indicate any homosexuality, but there seems little doubt that he committed incest with his sisters, that he openly seduced many Roman matrons, and that he consorted with the lowest of the prostitutes as well. Yet this man who fancied himself to be a god, and who had an overpowering craving for omnipotence, was afraid of the lightning, would shut his eyes and wrap up his head, and even hide under the bed during a storm. He seems to have been an excellent example of overcompensation for feelings of inferiority to a highly pathological degree. Probably in addition to his epilepsy, if he had it, he suffered from paranoia. His is a striking example of the destructive powers of the uncontrolled ego in a man who has achieved a position of despotic influence over a people. He caused infinite suffering on a large scale, publicly insulted the decent citizens of Rome, bankrupted the State, and finally fell the victim of a plot to assassinate him. So great was the terror which he had instilled in the Roman people that even when his death was announced they feared for some time to take any steps, thinking the announcement to be a ruse whereby Caligula might find out what the people really thought of him. From the psychiatric point of view he was a pathological specimen either in his own time or in any other.

Superficially, at least, there seems to have been very little difference between Caligula and a somewhat more modern ruler, Ivan the Terrible of Russia. This monster became emperor in 1553 at the age of three years. As a boy he exhibited strongly sadistic impulses, torturing animals to death, running down women and children with his horse, and inflicting torture upon his subjects. For a time as a young ruler he was held very much in check by his wife and one of his friends among the nobility, and during that time the empire was extended, trade was commenced with England, and invaders were driven back. His wife died, however, when he was about twenty-six, and from that time until his death at the age of fifty-two his record is one of unrestrained cruelty. Many of his wealthiest subjects were driven from their estates and killed, and numerous tortures were inflicted

upon persons who crossed his slightest whim. Not satisfied with having his soldiers do the killings, he often performed his own homicides. He informed his subjects that he was their god and that his throne was surrounded by winged archangels. Yet, on the occasion of one invasion by the Tartars he fled ignominiously. Whether or not, as some writers suspect, Ivan the Terrible was syphilitic, there seems little doubt that he was definitely psychotic, suffering with some type of psychosis characterized by paranoid delusions and gross suspicion. His letters indicate considerable scattering and distractibility of thought, and are in places almost incoherent. On one occasion, displeased with the conduct of the citizens of one of the large cities, he marched upon it and massacred probably not less than 27,000 of the citizens, many of them with the most terrible tortures. The climax of his career came when in anger he struck his son, the Tsarevich, with such force that a few days later the prince died. Thereupon Ivan is said to have become speechless and much depressed, and then later to have become actively hallucinated, thinking that he saw and heard the prince everywhere. For the remaining two years of his life he seems to have tried to make some amends for the career which he had pursued and the unenviable record which he had set up. It seems strange to us that at his death the people lamented his passing, looking upon him as the God-appointed ruler and as the protector of Russia!

It is a pleasant relief to turn from the accounts of the brutalities and atrocities of Caligula and Ivan the Terrible to a brief consideration of a sweet and pure girl who, under the influence of what we today should certainly term hallucinations, redeemed France from the invader. I refer, of course, to Saint Joan of Arc, the Maid of Orleans. The story of the almost unbelievable exploits of this untutored farm girl who accomplished military feats in which the most daring soldiers of her time had failed, and who brought about the restoration of France to the Dauphin, only finally to be burned at the stake by the English, is so familiar that a recital of the details is hardly called for. The interesting feature from our point of view is that from the age of thirteen she was actively hallucinated in the auditory sphere and that these voices which came to her were usually accompanied by a bright light, that is, presumably a visual hallucination. The voices were not all those of supernatural creatures by any means; at least on one occasion she thought that she heard someone near her whom she thought to be a neighbor, telling her that her mother needed her. Much of the time, however, the visions and the voices were attributed to the Angel Michael and Saints Catherine and Margaret. She even spoke of embracing and kissing them and mentioned their odor. There seems every reason, therefore, to say that Saint Joan was definitely the subject of numerous hallucinations of the various senses. Many of the messages which she received had to do with the mission to which she devoted her life, namely, the restoration of France to the Dauphin. There was a consistency of purpose about Saint Joan which illustrates the fact that mental deviations are not inconsistent with substantial accomplishments. She was a girl of single purpose, fortified and strengthened immeasurably by the voices and the visions. Although it is likely that in all probability if she had expressed these ideas today she would have been sent to a mental hospital rather than to the stake, it should be borne in mind that in her time there existed a very firm belief in communication by human beings with the forces of good and of evil, and in the reality of witchcraft. Evil spirits were thought to be much more active, however, and when anyone claimed to have communications from God or the angels he was rather likely to be accused of being deceived by an evil spirit who had taken that form. With such a widespread belief it is perhaps not strange that Joan's statements were thought by some to be divinely inspired, or that those of opposite interest viewed them with profound suspicion or thought she was a witch. Only seldom did the possibility of mental disorder enter into the minds of those who were in charge of the ecclesiastical courts, although unquestionably many of those who were put to death as witches were the victims of mental disease. Ireland cites a case contemporary with that of Joan of Arc in which a shepherd boy who made claims similar to those of Joan was executed, and was referred to by the chroniclers as insane. Apparently no one at the time suggested mental disorder in the case of Joan of Arc, the contem-

porary evaluations of her claims and accomplishments being influenced by desire and faith on the one hand, or by hatred and ignorance on the other. Very few women in history have done as much for their country as did this simple girl from Domremy. Although she met with the grossest injustice in her time, it is gratifying to note that belated recognition has been given to her by the church of which she was so faithful a disciple.

It may sound like psychiatric hyperbole to say that if it had not been for one case of mental disorder there might today be no such country as the United States of America. Such a statement, however, is not so strange as it may seem. King George III of England, who ascended the throne in 1760, remaining as king for sixty years, was the victim of manic-depressive psychosis, and even in the intervals between his psychotic episodes showed such obstinacy, and such a strong tendency to meddle in the administration of the affairs of his kingdom that, as J. R. Green in his History of England says, "In ten years he reduced government to a shadow and turned the loyalty of his subjects into disaffection; in twenty he had forced the Colonies of America into revolt and independence, and brought England to the brink of ruin." Those of us who struggled with Burke's Speech on Conciliation in our schooldays will remember at least vaguely that there was a strong party in the English Parliament which believed that the Colonies were very unjustly dealt with, and it is more than likely that had George III been of a different mental makeup, ready to conciliate and to be fair with the subjects across the sea, the colonists might not have been forced to revolt against his rule. The King's first attack of mental disorder occurred when he was twenty-seven years of age, in 1765, that is, ten years before the American Revolution. Very few data are available concerning this episode, which apparently was only of a few weeks duration; the facts were rather carefully concealed from the public at the time, and for this reason we can only assume that it was similar to the later ones. In 1788, twenty-three years later, the King had a very definite attack lasting about five months, during which a regency was appointed. According to contemporary description, he was depressed, tearful, wished he might die, and at other times even made attempts to jump out the window. His speech is described as turbulent and incoherent; there is mention of gestures and ravings and of howling like a dog. He was cared for by Dr. Francis Willis, a seventy-year old physician and clergyman. He prescribed Peruvian bark and saline medicine, blisters and mechanical restraint. Willis seems to have been somewhat of a quack; he said, for instance, that nine out of ten of his patients recovered, but when quizzed by a Parliamentary committee he could not tell how many patients he had treated or cured! On one occasion during this illness the King told his Lord Chancellor that he had been knocked down; however, there is some doubt as to how accurate his statement was. Whether the allegation was true or not, wide public indignation was stirred by the treatment accorded the King, and did much to arouse interest in the more humane care of the mentally ill in England. One feature of this illness of the King is that Dr. Willis was awarded a pension of £1500 for twenty-one years for his services. In fact, he takes the prize for the size of fees, probably for all time, as later on he treated the Queen of Portugal during a mental illness, receiving a fee of £20,000—a very large sum of money in those days.

Another attack occurred thirteen years later (1801), lasting about four months, and during this time the King was attended by two sons of the Doctor Willis who had attended him in 1788. Apparently he showed symptoms of the manic phase, as we should say; according to contemporary description, "his body, mind and tongue are all upon the stretch every minute and the manner in which he is now expending money in various ways all evince that he is not so right as he should be." There are some indications that the King was not thoroughly normal in his conduct with his family for some little time following his alleged recovery. Another psychotic episode occurred in February, 1804, lasting probably until October of the same year. During this period, in spite of there being no regency set up by Parliament, there was a change of ministry and a number of bills were signed by the King. The conduct of the Lord Chancellor, Lord Eldon, at this time caused great criticism later on when it came to light. It appears that the physicians were far from

ready to say positively that the King had recovered, but, in spite of their unreadiness, Lord Eldon permitted him to sign certain royal commissions. His attitude is of interest as illustrating the position of many members of the legal profession and, indeed, of some persons with no profession at all, in dealing with a medical matter and passing judgment upon a medical topic. When criticized Lord Eldon said, "I have been significantly asked if I would supersede a commission of lunacy against the opinion of physicians. I have often done so. The opinions of physicians, though entitled to great attention, were not to bind him absolutely. It was most important to the sovereign that the chancellor should not depend wholly on the evidence of the physicians if he himself thought the King perfectly competent to discharge the functions of the royal authority." We are reminded by this attitude of Lord Eldon's of the viewpoint of one of his successors as Lord Chancellor, who in 1862 referred in debate to the "vicious principle of considering insanity as a disease." There are still, unfortunately, many non-medical persons who, like Lord Eldon, are ready to express an opinion of one's mental condition, an opinion often based entirely on prejudice, and often dogmatic in inverse ratio to the knowledge of the curbstone diagnostician.

The rest of the story of poor King George III can be rather briefly told. In October, 1810, he developed the attack which was to prove to be his last. He was by that time seventy-two years of age, his sight was very defective, and his hearing was becoming impaired. The accounts speak of delusions and extravagances of plans, but we have no great details of the situation except a statement made by the Duke of York in 1811 which gives a rather effective picture of a manic condition: He says that "he soon flew off from that subject, and then ran on in perfect good humor but with the greatest rapidity and with little or no connection, upon the most trifling topic, at times hinting at some of the subjects of his delusions, in spite of all our endeavors to change the conversation. He spoke of his power to talk with the dead and at other times he appeared to be quite gloomy." George III died in January, 1820, but had not exercised any of the royal prerogatives since very early in his last illness, the Prince of Wales having been made regent in 1811. It is perhaps not entirely by coincidence that it was during the rein of George III and soon after the first attack of mental disorder in this monarch to come to public attention, that William Tuke at the York Retreat (1796) put into practice his principles of non-restraint and humane care. We may, therefore, in large measure, perhaps, attribute to the illness of this unfortunate King two important historical developments: (1) the separation of the American colonies from the Mother Country, and (2) the origin of the stream, now become a mighty river, of humanitarian care of the mentally ill.

One might continue the list of notable figures who have exhibited a number of peculiarities almost indefinitely. In the field of literature, for example, we might consider Byron, Coleridge, Dostoievski and Poe; in the field of painting Van Gogh, Rembrandt, William Blake and Turner; in that of music, Schumann, Donizetti and Chopin; in philosophy, Comte and Schopenhauer; and among rulers, Julius Caesar, Nero, Napoleon and Ludwig II of Bavaria. Such a list, indeed, is only a beginning!

We have already considered in moderate detail but not with any degree of profundity or novelty six important personages, considerably varied as to time and as to their effects upon world history. If any one lesson is to be drawn from the outlines already given it is this: That mental disorder, although it can, particularly in the despot, be responsible for terrific and incalculable harm, need not necessarily be a bar to substantial and significant contributions to human welfare. Certainly mental deviation of a pathological variety is not essential to genius, and certainly genius is not a manifestation of psychosis or even of neurosis. The genius, being human, is not exempt from human frailty, and, although as Cabanès remarks, he may pay tribute to neurosis, this is not obligatory. But after all, genius is something which is extremely rare, and it is doubtful, indeed, whether many more geniuses could be tolerated than actually burst upon the world from time to time. They are freaks and do not answer to the laws of genetics, so that it is not very likely that geniuses will ever be bred as such, even if some day we reach the stage of progress (or retrogression!) outlined by Aldous Huxley in his "Brave New World." For the common man, the ordinary individual who does not look upon himself as

any more than run of the mine, there is a lesson to be drawn as well, namely, that neurosis or psychosis, or other deviations from the mental norm need not necessarily be a permanent bar to the carrying out of the relatively useful life.

The day of asylums is past, and passing, too, is the notion in the minds of the public that one who enters a mental hospital need never expect to leave to resume a useful life. The public, slow as the process of popular education is, is learning to receive the discharged patient from a mental hospital and to encourage him to resume his place in society. In this process of public education the work undertaken at the Psychiatric Institute in Chicago in rehabilitating former patients is setting an example which may well be followed in other centers. And so, perhaps, though we cannot all be famous or even famous madcaps, everyone, whether his native endowment be that of the genius or the ordinary man, may take heart from the manner in which others have overcome their handicaps, and may resolve that if he is so unfortunate as to develop mental illness, there is no reason for him or his family and friends to accept the philosophy of defeatism.

HYPERTENSION AND UROLOGIC DISEASE

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One of the results of the increase in specialization in medicine has been to obscure certain fundamental concepts of disease. This is particularly true of Bright's disease. Bright[1, 2] is honored because he was able to convince the profession that albuminous urine was due to kidney "derangement." He would be surprised today to learn of the narrow confines to which his observations have been relegated. Cases that would certainly be classified today as urologic disease may be found among his protocols as well as examples of tumors, tuberculosis, amyloid disease and the group of nephridities. The internist has been concerned with nephritis and nephrosis, while the urologist has undertaken responsibility for the infections, obstructions, new growths and their results. That medical and surgical disease of the kidney may be readily confused ante mortem has been emphasized.[3]

The relationship of the kidney to hypertension, long a controversial subject, has not been facilitated by this arbitrary division of renal disease among the specialists. The urologist, primarily attentive to the local problem (establishing drainage and relieving obstruction), has not been able to follow patients to their cardiovascular deaths. Although aware of the beneficial effects upon the blood pressure after removal of urinary obstruction, he has not persuaded physicians generally of the possibilities of this association. The potential mortality and morbidity due to cardiovascular disease in urologic patients has sometimes minimized diagnostic and therapeutic measures, even though these possibly would be directed toward the prevention of further cardiovascular change. The internist on the other hand, has not given sufficient attention to urologic conditions as a potential source of the dreaded hypertensive vascular disease. His concept of nephritis (5 per cent.) and nonnephritic or essential hypertension (95 per cent.) remains.

Pathologically, idiopathic hypertrophy of the left ventricle (later called hypertension) has been linked with numerous types of kidney disease of which granular atrophy;[5] contracted kidney (schrumpfniere);[6] pyelonephritis;[7] lower urinary tract obstruction (prostatic hypertrophy, benign or malignant, urethral stricture, bladder stone, etc.);[8] and upper urinary tract obstruction (ureteral obstruction, hydronephrosis from all causes, congenital cystic kidneys and decreased blood supply)[9] may be cited.

Experimentally, hypertension has been produced in various animals to a greater or less extent by reduction of the amount of functional renal tissue,[10] interference with the renal blood vessels: arterial[10] and venous,[10] and ureteral obstruction.[10] In connection with this latter it is of unusual interest that *reduction of the renal blood supply has been demonstrated to occur in artificially produced hydronephrosis.*[11] In spontaneous hydronephrosis, hypertension has been reported.[12]

Clinically, the correlation of these experimental findings with human pathology has progressed rather slowly. However, hypertension and

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various urologic lesions[13] have been reported. Recently successful removal of unilateral renal disease has resulted in a reduction of the blood pressure.[14] In a study of 71 cases of "essential hypertension," 50 were found to have demonstrable urologic abnormalities.[15] We[16] were able to find 101 (16.8 per cent.) instances of all types of urologic lesions among 600 case records of private patients with hypertension. In a study[16] of 97 cases of prolapse of the uterus it was found that 74 (76 per cent.) had hypertension. It was suggested that prolapse of the uterus with resultant ureteral obstruction and hydronephrosis caused a decrease in the renal blood supply and the hypertension.

Since the clinical histories are too long to publish completely, we have summarized in table form ten cases which we believe represent types of urologic hypertension. These patients have been followed for a number of years and the diagnosis of hypertensive vascular disease has been well established (See table 1).

Probably the most obvious example is M. R. (case No. 2). The autopsy findings substantiate clearly a long clinical period of hypertension and cardiac hypertrophy with numerous vascular complications. There was a marked reduction in the amount of kidney parenchyma, hydronephrosis being present on the right and the contracted kidney on the left was supplied with a calcified and sclerosed renal artery (See figure 1).

Reduction in the amount of renal parenchyma was present in the four autopsied cases. Furthermore, all cases showed distinct evidence of either bilateral or unilateral urinary tract obstruction. Unfortunately we are unable to present detailed findings of the main renal arteries or their branches. Clinically, the remainder were shown to have some degree of hydronephrosis, which may result from numerous extrinsic and intrinsic causes.[17]

In an effort to stimulate further interest where larger numbers of cases may be available, we have presented briefly these examples of urologic hypertension. It may be suggested from the pathologic standpoint that whereas microscopic studies are made routinely of the renal parenchyma and small blood vessels, in the future as an aid to establishing the incidence of renal ischemia as a cause of hypertension, the main artery and its branches and venous supply should be carefully examined. Also, collateral blood supply should be sought for which may have diminished the deleterious effects of the ischemia.

The numerous experimental studies obviously demand that serious attention be given to the renal factor as a cause of hypertension. Practically, while it is impossible to study the renal blood supply in any given case of hypertension, urologic defects should be sought for which may be potential factors in the production of this



Fig. 1. Case No. 2 (M.R.) Complete hydronephrotic atrophy of the right kidney with hydro-ureter. Contracted left kidney with calcified left renal artery, sclerotic aorta, and diverticula of the bladder.

renal ischemia. Recent reports of the removal of these lesions when unilateral have been very encouraging.

Closer cooperation between the urologist and the internist would go far in establishing the value of present day methods of therapy in these cases. However, the great majority of patients

we have had the opportunity to study have shown well developed pathologic changes, obviously of long standing. The key to the situation, then, would seem to rest with those who see the various urologic lesions in their incipiency. This will be accomplished only when the concept of nephritic and non-nephritic hypertension is discarded. The simple determinaton of the blood pressure and negative urine analysis are insufficient grounds upon which to diagnose essential hypertension.

As we have pointed out before the diagnosis of *hypertension of unknown origin* is only tenable when every effort has been made to exclude all the possible causes, particularly eliminating defects anywhere in the urinary tract.

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TABLE 1. SUMMARY OF CASES

Name	Age	Sex	Cardiovascular Status	Urologic and Renal Status	Course
I.F.	59	F.	Longevity in family history. Numerous bl. pr. readings (1934-1936) 170/100 to 210/110 mm. Hg. Aorta widened left ventricle enlarged (x-ray) EKG showed left axis deviation. Mild peripheral and retinal sclerosis. Protracted cardiac insufficiency.	Long history of bladder irritation. Urine: sp. gr. 1.012; alb. 1+; wbc 3+. Bilateral hydroureter and hydronephrosis with obstruction in bladder floor.	Died 1936 of cardiac insufficiency and mild uremia. Autopsy: Ht. enlarged. Valves negative. Slight sclerosis of aorta and coronaries. Carcinoma of cervix invading bladder floor. Left: hydroureter-pyelonephritis. Right: pyoureter-pyelonephritis.
M.R.	57	F.	Neg. family history. Bl. pr. readings (1925-1937) 150/90 to 290/160. Sclerotic aorta. Left vent. enlarged (x-ray). Normal axis deviation in EKG. Marked retinal sclerosis. Repeated cerebral accidents.	Occasional mild attacks of "cystitis." Urine: sp. gr. 1.001 to 1.013; alb. 1+ to 3+; B.coli and staphylococci in culture. Diverticulum of bladder. Obstructed right ureter. Absent kidney shadow on the right by intravenous urography.	Died 1937 of moderate grade uremia and cardiac insufficiency. Autopsy: Ht. weight 540 Gm. Valves negative. Sclerosis of entire aorta, coronaries and cerebral vessels. Right kidney showed hydronephrotic atrophy. Pelvis enormously dilated. Left kidney smaller than normal and nephrosclerotic. The left renal artery was sclerosed and calcified.
N.S.	67	M.	Neg. family history. Bl. pr. (1930-1937) 120/80 to 210/120. Aorta widened and left ventricle enlarged (x-ray). EKG showed left axis deviation and auricular fibrillation. Moderate retinal and peripheral sclerosis. Mild cardiac insufficiency. Anginal syndrome.	Urologic studies not made. Urine: sp. gr. 1.010 to 1.014; alb. 0 to 2+; occasional wbc. Prostate symetrically hypertrophied.	Died 1937 in acute cardiac failure. Autopsy: Ht. weighed 480 Gm. Negative valves, marked coronary and aortic sclerosis with myocardial infarcts. Trabeculated bladder. Enlarged prostate. Left kidney: 60 Gm. Severe granular arteriosclerotic contracted kidney with stone in one calix. Right kidney: 250 Gm. Numerous recent infarcts and compensatory hyperplasia.
C.G.	33	M.	Neg. family history. Bl. pr. 130/80 to 190/100. Aorta widened and left vent. enlarged. Marked cardiac insufficiency with edema. EKG showed normal axis deviation and auricular fibrillation.	Severe urologic complaints. Urine: sp. gr. 1.008; alb. 3+ to 4+; wbc. loaded. Bilateral hydronephrosis with ureteral stones and infection. Moderate grade uremia.	Died 1932 of uremia, cardiac insufficiency. Autopsy: Not obtained.
J.W.	66	F.	Neg. family history. Bl. pr. readings (1927-1936) 130/80 to 210/110. Aorta widened. Left vent. enlarged (x-ray). Normal axis deviation in EKG. Numerous ventricular extrasystoles. Myocardial infarct in 1930. Cerebral accident 1936. Protracted cardiac insufficiency.	Long standing hematuria and bladder irritation. Urine: sp. gr. 1.010; alb. 1+ to 2+; wbc. loaded per h.p.f.; B.coli cultured from the right kidney. Right hydronephrosis, mild bilateral ureteral dilatation. Cystitis present.	Died 1936 of carcinoma (abdominal). Autopsy: Ca. of ovaries with widespread metastases. Ht. enlarged. Pelvic abscess. Left kidney 160 Gm. contained a hypernephroma. Right kidney 150 Gm. contained several cysts. Hydronephrosis present. Thickened intima of the arteries.
H.S.	56	M.	Neg. family history. Bl. pr. (1927-1934) from 160/90 to 200/100. Aorta tortuous and left vent. enlarged (x-ray). EKG showed left axis deviation. Myocardial infarct 1934.	Long standing urologic problem. Urine: sp. gr. 1.003 to 1.021; alb. 1+ to 2+; wbc. usually loaded. P.S.P. 67%. Bladder stone removed 1927. Bilateral hydronephrosis. Stones removed from left ureter 1930; left nephrectomy 1930. Continued urinary tract infection.	Died 1935 following acute myocardial infarct. Autopsy: Not obtained.
E.M.	42	M.	Neg. family history. Bl. Pr. (1928-1939) 162/100 to 200/118. Aorta widened and enlarged left vent. (x-ray). EKG showed left axis deviation. Marked retinal sclerosis.	Long standing urologic complaints. Renal stone right 1921. Urine: sp. gr. 1.001 to 1.030; alb. 1+ to 2+; usually loaded with wbc. Nephrectomy for staghorn stone 1927 and hydronephrosis. Mild prostatitis and cystitis.	Living 1939 with moderate uremia. Has impaired vision, persistent headache. Bl. pr. is 240/120.
C.F.	70	F.	Family history shows Bright's disease and hypertension. Bl. pr. (1934-1939) 160/90 to 180/100. Tortuous sclerotic aorta and enlarged left vent. (x-ray). EKG showed normal axis deviation and paroxysmal auricular fibrillation.	Long standing bladder irritation. Urine: sp. gr. 1.005 to 1.022; alb. 0 to 1+; wbc. 1+ to 3+. Bilateral ureterohydronephrosis with infection. Chronic urethrocystitis. Small left ureteral ostium.	Living 1939. Maintains good renal function and cardiac compensation on greatly limited activity.
J.F.	58	F.	Diabetes in family. Bl. pr. (1939) from 140/90 to 170/90. Mild aortic sclerosis and left vent. enlargement. EKG showed normal axis deviation. Mild peripheral sclerosis.	Long standing bladder irritation. Urine: sp. gr. 1.018; alb. neg.; wbc. 1+. Right hydronephrosis with stone in lower pole (right).	Living 1939. Maintains good renal function and cardiac compensation.
B.K.	45	M.	Family history unknown. Bl. pr. (1932-1939) 155/110 to 260/150. Widened aorta and enlarged left vent. (x-ray). EKG showed left axis deviation. Marked retinal sclerosis. Slight cerebral accident 1939.	Long standing attacks of urinary colic. Urine: sp. gr. 1.007 to 1.020; alb. 1+ constantly; wbc. 1+ with occasional clumping. Hydroneplrosis and infection in right kidney 1931. Right ureteral stone removed by manipulation 1936. Mild hydroneplrosis with stone (passed 1937) and infection. Reduplicated pelvis, bilateral.	Living 1939. Severe persistent hypertension (270/170 not infrequent). Compensated. Complains of persistent headache and diminished vision (vascular basis).

CHEMOTHERAPEUTIC AND SPONTANEOUS RECOVERIES FROM PSYCHOSES. A COMPARISON AS TO QUALITY

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CHICAGO

About three years have passed since the first Reports on chemotherapy, namely insulin and metrazol, in the treatment of the functional psychoses, have appeared in the medical literature. A wealth of material on the subject has grown up since then. However, very little mention has been made as to a study of the quality of recovery one may obtain with chemotherapy, and as to whether it compares favorably with the spontaneous remissions or whether it excels it. Rymer, Benjamin and Ebaugh[7] were the only ones to report on a qualitative study of remissions. On other rare occasions when the subject was mentioned, some investigators as Goldstein et al.[2] and Rymer et al.[7] felt that the recovery made following treatment was of a superior nature to that of the spontaneous type. On the other hand, some, as Piotrowski[6] and Schatner and O'Neil,[9] felt that the remissions due to chemotherapy were at least comparable to spontaneous remissions. The authors, through their connection with the outpatient clinic and their experience in the field of chemotherapy,[2] have had an excellent opportunity to observe and study both types of recovery and at this time are able to give a preliminary report of their findings.

May we state at the outset that we are quite aware of the fact that there are gradations in recovery, both of the spontaneous and of the chemotherapy type. However, in this report we are concerned solely with those patients manifesting a good recovery according to a set of criteria which we have followed very stringently.

Criteria for Recovery

The most difficult problem in this study was of course the elucidation of the criteria for recovery. Many are the viewpoints as to what exactly constitutes a good remission; however, most as Sakel,[8] Low,[4] Kagan,[3] Barbato,[1] Phillips,[5] Rymer,[7] etc. agree that a resumption of the former personality plus an insight into the former mental condition are sufficient evidence of a return to a normal level. For the sake of an objective study we standardized our criteria and saw to it that the patients studied fitted into the composite picture of a healthy individual. The standard which we elicited from every patient before he or she was called completely recovered are as follows:

1. Insight.

All patients had to acknowledge without too much pressure, that they had been temporarily mentally ill or that they had had a "nervous breakdown." An outright admission to a temporary psychotic episode is considered by us as a better type of insight than the escape admission to a "nervous breakdown" which is considered sufficiently adequate despite the fact that in many circles of our society a nervous breakdown is almost the fashionable thing to have.

2. Adjustment.

All patients had to have an adequate adjustment both as to society and occupation. They must resume or make an effort to resume their former social trend before they could be considered as leading a normal existence. Naturally, patients encountered some difficulty in this respect for they had to overcome both their own sense of guilt and shame as well as the prejudices their former friends and associates carry against mental institutions and their inmates. Certainly adjustment in the occupational field in these days of economic stress was of great difficulty. However, our criteria for a good recovery required that if a patient was unable to resume gainful occupation, the least that was expected of him was an understanding of the economic difficulties, the lack of employment, and that his failure to procure a job was not due to discrimination of the world against mentally ill individuals (an escape too easy to fall into), but a universal problem applicable to the healthy and ill alike.

3. Absence of psychotic ideology.

Needless to say that patients must give up entirely their previous psychotic ideology and behavior. Many patients, especially those who had had chemotherapy, showed an amnesia for past events. After careful questioning however, in all cases we were able to elicit an admission

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to some overt activity which at the present time seemed to them to be senseless and ridiculous.

4. Objectivity.

The criterion of objectivity, as that of insight, was one of the most difficult to elicit. Nevertheless we required it of all patients. The individual had to be able to completely detach himself from his psychotic episode and be able to discuss it as dispassionately as one might discuss a previous physical ailment such as an operation or a confinement. Furthermore, upon questioning, many revealed that they would be able to recognize early signs and symptoms of an impending recurrence and the steps they would take to prevent a complete breakdown.*

Method of Study

All patients selected were those who, on initial examination following their discharge from a state institution, seemed to fulfill all the requirements set forth in our criteria for complete recovery. Since the first examination, all those patients have been seen by us at least three times at monthly intervals. The individuals were encouraged to come with members of their families, friends, or neighbors, and both patient and companion were questioned separately and searchingly. In addition, a trained social worker from our Social Service Department visited the homes of these individuals at least three times at monthly intervals, where home environment, behavior, and adjustment were carefully noted and recorded. These findings were given to the examining physician on day of patient's visit to the clinic. In this fashion we were able to evaluate the individual's make up, not only from our objective findings, but also from the opinion of those people who have known the patient before and after his or her psychotic episode.

Results

As indicated in the charts we have studied twenty-four cases of spontaneous remissions. Their average residence in the State Institution was of 439.5 days' duration. Their diagnoses were, one psychoneurotic, one mental defective with psychosis, twelve schizophrenics, ten manic-depressives. Of the chemotherapy recoveries we have chosen from our files, and at random, a like number of cases with the same types of psychoses. Their average stay in a state institution was 163.9 days. After careful study of these former patients we were able to elicit from them all criteria which go to make up a mentally healthy individual. On the surface it seemed that there was no difference in the type of recovery made, whether it was due to chemotherapy or whether it was of a spontaneous type. However, it was very evident that there was a marked difference in attitudes of these two groups, which in our opinion, bears a grave prognostic significance. The difference was apparent in their attitude toward their illness and towards the hospital.

Attitude Toward Illness

Those of the chemotherapy group seemed to have more of a dread of the cure than of the illness proper. They felt that their illness was unfortunate but, like a fracture of a bone which is unfortunate, has a definite therapy. They did not brood over their psychotic episode. They had the feeling that should they become ill again there is a remedy for this ailment. Not so those who have had a remission spontaneously. Theirs was a real dread of the disease. They had the feeling that should they become ill again they will have to fight their own battle against terrific odds. They tended to worry that another attack may place them in a state institution for life.

Attitude Toward Hospitals

In this respect, also, the attitude of the chemotherapy group was much more desirable. They felt that they were in a hospital where a staff of physicians and nurses did everything scientifically possible to get them well and place them on the outside. Their stay in the hospital was comparatively short.[9] As soon as they were considered in a state of remission every effort was made to see that patient was paroled.* There was no need for a long period of dehospitalization, for as soon as they were able to rationalize they were given to understand that their stay was temporary so that they did not become institutionalized in their habits, activities, and

*Since this has been written two patients (H.W. and B.J.), oddly enough one from each group, have consulted the authors for help in what seemed to them to be an impending break. Both showed excellent judgment as the symptomatology related by them was significant.

*We feel that the term parole should be eliminated from the terminology of state institutions. It has a sinister meaning to all recovered patients who cannot reconcile the terms hospital and patient with that of parole. Observation period could be substituted to a greater advantage.

manner of thinking. This excellent attitude was not found in patients who have had a spontaneous remission. Most of them were of the opinion that time and not medical aid has helped them to escape a permanent life in an institution. They bore a slight resentment to the institution where their average stay has been more than of one year's duration. Many of them had become institutionalized and the psychic tranma inflicted upon them may be of no little consequence.

CONCLUSION

1. A comparison of the type of recovery made by twenty-four chemotherapy patients and twenty-four spontaneous remissions.

2. Criteria for recovery are elucidated.

3. The average stay of patients of the chemotherapy group in a state hospital is by far shorter than that of the spontaneous remission group. This to some extent may be due to the efforts of the attending physicians who are interested in placing these individuals on the outside to further facilitate their resumption of a normal life.

4. Superficially it seems that there is no difference between a recovery which is spontaneous or one which is due to chemotherapy. However, there is a vast difference in the attitude of these two groups to their illness and hospital which may bear grave prognostic significance.

5. Further studies on the last two points will be carried on by the authors.

SPONTANEOUS REMISSIONS

Name	Diagnosis	Admission Date	Parole Date
K. G.	Dem. Prae., Cata.	11-26-37	2-25-38
J. M.	Dem. Prae., Hebe.	10- 7-37	3- 9-38
B. W.	Man. De., Man.	2- 7-37	3-26-38
J. W.	Man. De., Man.	3-18-38	5-29-38
L. R.	Dem. Prae., Cata.	3-24-38	4-25-38
J. S.	Man. Dep., Mixed	10-22-37	2- 1-38
H. W.	Dem. Prae., Cata.	4- 9-35	4-15-38
A. S.	Man. Dep., Man.	4-15-37	10-24-37
T. A.	Psy. with Man. Def.	3-25-38	5-14-38
J. G.	Dem. Prae., Cata.	12-17-36	5-26-38
M. H.	Man. Dep., Dep.	11-13-37	12-19-37
M. L.	Dem. Prae., Hebe.	2- 1-30	12- 2-37
G. L.	Dem. Prae., Cata.	10-28-37	12-23-37
C. H. P.	Man. Dep., Man.	8-19-37	12-23-37
E. D.	Dem. Prae., Cata.	5-16-35	12-19-37
B. W.	Man. Dep. Mixed	6-29-34	1- 9-38
R. K.	Man. Dep., Dep.	5-6- 36	1-16-38
D. C.	Psychoneurosis	1-14-38	2- 1-38
D. S.	Dem. Prae., Cata.	5-16-35	12-23-37
A. W.	Man. Dep., Man.	7-22-37	3-18-38
H. S.	Man. Dep., Man.	9-24-37	3-12-38
M. H.	Dem. Prae., Cata.	3-18-38	4-25-38
A. S.	Dem. Prae., Hebe.	5-27-37	4-14-38
E. J. S.	Dem. Prae. Cata.	12- 2-37	5- 9-38

CHEMOTHERAPY REMISSIONS

Name	Diagnosis	Admission Date	Onset Date	Parole
E. A.	Psychoneurosis, Hysteria	12-27-37	12-37	2-13-38
I. A.	Man. Dep., Mixed	9-26-37	9-16-37	12- 5 37
L. B.	Hebe., Dem. Prae.	9-19-37	9- 1-37	11-21-37
C. B.	Cata., Dem. Prae.	2-26-37	2-37	12-26-37
N. B.	Cata., Dem. Prae.	6-24-37	5-37	1-23-38
A. B.	Man. Dep., Dep.	8-12-37	2-37	12-25-37
M. B.	Man. Dep., Man.	1-13-38	9-37	3-13-38
M. E. B.	Man. Dep. Man.	10-21-37	8-37	3-27-38
M. A. D.	Man. Dep., Man.	5-12-38	5-38	8- 2-38
S. G.	Man. Dep., Man.	11- 4-37	36	1-19-38
L. H.	Cata., Dem. Prae	9-22-37	9-37	3-20-38
B. J.	Cata., Dem. Prae	7- 1-37	6-10-37	12- 2-37
L. J.	Cata., Dem. Prae	1 6-38	12-37	6-19-38
E. M.	Cata., Dem. Prae.	5-13-37	4-37	10-21-37
A. M.	Cata., Dem. Prae.	7-12-37	37	1-19-38
P. M.	Hebe. Dem. Prae.	12-23-37	....	3-13-38
D. M.	Man. Dep., Man.	4-29-37	4-29-37	9-11 37
N. M. N.	Man. Dep., Mixed	6 17 37	4- 6-37	5- 4 38
A. P.	Man. Dep., Man.	12- 2-37	11-37	3-27-38
S. P.	Cata. Dem. Prae.	10-28-37	9 26-37	12-24-37
J. S.	Cata. Dem. Prae.	3- 7-35	29	3-13-38
J. S.	Hebe. Dem. Prae.	4-29-37	31	1-21-38
M. S.	Psy. with Mental Def.	3- 4 37	4 37	5-10-38
A. W.	Man. Dep., Man.	12-23-37	11-37	5- 8-38

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ACUTE GINGIVOSTOMATITIS IN CHILDREN

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There is considerable confusion concerning acute infections of the mouth in children. It is the purpose of this communication to describe a condition of the mouth in children which is in reality a definite disease entity. One frequently sees children with swollen, bleeding, painful gums together with high fever, malaise and irritability.

Many different terms have been applied to this condition. Vincent's stomatitis and Vincent's infection of the gums are probably the most commonly used terms. Likewise, acute stomatitis, fuso-spirillary infection of the gums, acute gingivitis, catarrhal stomatitis, trench mouth all have been used for this disease. Black[1] in an excellent article suggests the term "acute infectious gingivostomatitis." This term would seem best applicable to this condition, although its infectious character has not been proven.

The disease affects a very definite age group. Black,[1] Kellett,[2] Smith[3] have found the condition most commonly between the ages of eighteen months and four years. It appears to affect girls somewhat more frequently than boys. It is found equally as often in well cared for children as in the poorer classes. There seems to be a definite seasonal appearance of this disease. In my experience it appears most commonly between March and June, whereas Black[1] reports it more commonly between October and January.

The etiology has caused considerable controversy. Plaut-Vincent's organisms are found in great numbers in direct smears. Henry,[4] Belding,[5] Stahr[6] believe the disease to be due to a fusiform bacillus and spirochete infection. Black,[1] and Brennemann[7] are not certain that the Plaut-Vincent's organisms are a causative factor. It has been my impression that the onset, course and end-result is against the Plaut-Vincent's organisms as the cause. In regard to diet one is tempted to think of a possible vitamin deficiency. On questioning the child's dietary habits there is usually no evidence of an unbalanced diet. The rapid course of the disease is against any possible deficiency.

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In a careful analysis of acute gingivostomatitis one is struck with the abrupt onset and the common presence of a mild tonsillitis or pharyngitis. The usual history obtained is that of a child who becomes suddenly ill with high fever, malaise and irritability. If seen early, nothing is found on physical examination except a moderate diffuse redness of the tonsils and posterior pharyngeal wall. Within twenty-four hours there appears first a marked redness of all of the gum surfaces with bleeding on slight trauma. At no time can one determine at what tooth or several teeth this inflammation arises. Apparently all of the gum surfaces become involved at the same time. During the first twenty-four hours the breath has a slight fetid odor and there is usually considerable salivation. The child apparently is extremely uncomfortable. All solid foods are refused and liquids are taken only with considerable coaxing. During the next twenty-four-hour period the gums become greatly swollen, bleed very easily, and retract from the teeth. Pus and necrotic debris may be seen exuding around the gum margins. The breath is extremely foul. Salivation is so profuse that there may be constant drooling. At this time the cervical glands along the margin of the jaw become enlarged and tender. Examination of the throat reveals the same type of redness observed at the onset; one rarely ever sees a necrotic membrane on the tonsils or posterior pharyngeal wall. There may be aphthous types of ulcers on the buccal mucous membranes and the tongue. The appearance of the child at this time is that of one utterly miserable, and yet not sick enough to want to be in bed. At this stage the temperature ranges between 101° and 105°. The peak of the disease is usually the third or fourth day. By the end of a week the disease resolves almost as rapidly as it began. Probably the first sign of resolution is the change in the behavior of the child, together with a lowering of the temperature. The gums will frequently return to their normal appearance in twenty-four to forty-eight hours.

Complications of acute gingivostomatitis are extremely rare. It is rather surprising that the gums return to their normal appearance without leaving ulcerations of a chronic nature. The teeth are practically never loosened. Osteomyelitis of the jaw is extremely rare. The cervical adenitis subsides with resolution of the gums.

Treatment of various types have been described. Brennemann[7] feels that general supportive measures are all that is necessary. Smith[3] advises bismuth sodium tartrate intramuscularly. Maxwell[8] suggests acetarsone by mouth and applied locally as a paste. Neoarsphenamine, intravenously and locally as a paste, is used extensively. There is no conclusive proof that arsenicals are of any value in this condition. Gentian violet, acriflavine, silver nitrate, sodium perborate, mercurial antiseptics all have their advocates. In using these preparations on an acutely inflammed surface one must always think of a resulting chemical irritation. Probably the best drug to use is hydrogen peroxide applied full strength. This preparation has the advantage of being non-irritating and yet being active as a solvent for the necrotic debris. Its antiseptic value is open to question. I have found that the most satisfactory local treatment consists of swabbing the gums very gently with four applicators soaked with full strength hydrogen peroxide, using two applicators for the upper gums and two for the lower gums. These applications should be carried out at least four times daily. In most instances this treatment can be done very satisfactorily in the home. Acetylsalicylic acid may be used to control the temperature and the malaise. Sedatives such as phenobarbital are useful at times. Isolation of the patient from other members of the family is advisable even though there is little evidence at present of contagion.

Acute gingivostomatitis is of importance only from the standpoint that one should recognize that such a condition is reasonably common in children under four years of age. Its course follows a rather definite pattern with rare complications or sequelae.

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BENIGN TUMORS OF THE ANUS AND RECTUM

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About the anus and within the pelvic portion of the colon there develops a variety of growth, benign and malignant, between which the distinction is not easily established. Certain tumors which, though benign and never becoming malignant, and though not themselves destroying life, may cause much misery through ulceration with pain and hemorrhage, constipation and intestinal obstruction. In this group are also included irregular growths such as fungi, vegetations and excrescences. Others appear benign at first but later undergo a malignant change. Of forty-two such apparently benign tumors collected by Quenu and Landel, twenty of them ended as true cylindrical carcinoma. Some pathologists say that this second group are malignant from the beginning but remain dormant for an indefinite period, perhaps several years, and then take on a malignant activity. A third group of neoplasms are obviously malignant from the beginning.

These rectal tumors are of different anatomical structure, but each resembles the tissue from which it springs. All rectal tumors incline toward the direction of least resistance, and therefore protrude into the lumen of the bowel or externally on the skin. A tumor extending into the intestinal canal is dragged upon by the passing fecal current and the straining incident to defecation, until its attachment is drawn out into a slender cord or pedicle and a polyp is formed.

Histologically we find that in benign tumors the cellular elements are fully developed and normally arranged, whereas in malignant tumors the cellular elements are irregularly arranged, are imperfectly developed, and are found growing outside of their normal structures. Further than this we do not know what inherent qualities or characteristics render one neoplasm benign and another malignant.

Herpes—fever blisters—occur frequently at the mucocutaneous junctions of the anus and vulva and on the skin about these orifices. In either situation the vesicle is readily ruptured by abrasion during manipulation, or through maceration by the sweat or vaginal or rectal dis-

charge. Later infection and ulceration occur and the lesion may be mistaken for an epithelioma. This very benign ulcer is a common cause of unwarranted concern to the patient.

Herpes is due to a specific neurotrophic virus which may remain for long periods of time latent within the tissues and only develop its characteristic lesion as the result of some other tissue insult. Under such circumstances the characteristic vesicles develop in the skin or mucous membrane. Certain individuals appear to be sensitized and are liable to recurrent attacks. It is common in association with malaria, pneumonia, meningitis and febrile states.

Symptoms.—There is often a prodromal period of a day or two during which the patient feels ill and has a moderate fever (101° F.). Locally there is itching and burning of the skin and erythema, followed by a multilocular vesicular eruption, surrounded by an erythematous areola. The vesicles soon encrust and the crusts drop off, ordinarily without leaving any scar. The sensory manifestations are burning pain, hyperesthesia, hyperalgesia and sometimes paresthesia. When the ulcers appear within the rectum, there is a history of recent sharp soreness within the rectum, together with tenesmus. Proctoscopically there are found multiple, small, superficial ulcers in the anal or lower rectal mucosa. These closely resemble the "canker sores" seen in the mouth. The condition usually clears up within a week.

Treatment is purely symptomatic. Before rupture of the vesicles, some relief may be afforded by frequently applying spirits of camphor. Later the ulcers should be cocainized and then touched with a stick of silver nitrate. Because of the work that has been done in the relation of herpes zoster to varicella, I advise my patients to be vaccinated against smallpox.

CYSTS

The cyst is a sac with connective tissue or other type of wall containing material different from that of the wall and usually either fluid or semifluid. Many cysts have no relation whatever to tumors.

Cysts about the anus and perineum may be divided into three groups: (1) true tumors; (2) those due to defects of development; and (3) those due to mechanical, inflammatory and degenerative lesions. These latter are better termed pseudocysts.

SEBACEOUS CYSTS

Sebaceous cysts are relatively common lesions which are found most frequently in the scalp (wens), but may be found anywhere and are not uncommon about the buttocks. To this group belong comedones. Smith and Gault[1] report a woman whose body was covered with numerous sebaceous cysts which varied in size from that of a pea up to the size of a large orange. The largest of these were found in the buttocks and thigh region. Sebaceous cysts are retention cysts and occur in relation to cystic dilatation and degeneration of the sebaceous glands associated with certain of the hair follicles as the result of inflammatory obstruction to the discharge of sebaceous material. They also arise as the result of embryonal displacement of surface epithelium beneath the skin level. Such lesions frequently simulate tumors and are often removed surgically for this reason.

They consist typically of an epithelial lined cyst in which varying degrees of differentiation of the epithelium toward the sebaceous glandular type may be observed. The contents of such a cyst is composed of grumous, sebaceous material. Frequently, secondary calcification follows. At times these cysts are so distended with their secretion as to create an impression of a solid tumor rather than a cyst.

Symptomatology.—The sebaceous cyst is globular and sharply defined from, though movable in, the deeper skin or subcutaneous tissues in which it is situated. It is movable and somewhat firmer than the surrounding skin or adipose tissue. They seldom occur before puberty and are never congenital. They grow slowly and after attaining a certain size may remain stationary for years. Because of their prominence, they are liable to injury, become inflamed, and ulcerate. Should the contents only escape partially, the remainder is liable to undergo putrefactive changes, giving rise to an offensive ulcerated surface with raised edges which may readily be mistaken for epithelioma. True malignant disease of an epitheliomatous nature is said occasionally to supervene.

Diagnosis.—The sebaceous cyst may be confused with a circumscribed lipoma. The latter, however, is lobulated (sebaceous cysts are not)

and less movable. When the contents of a sebaceous cyst is exposed, there is no doubt.

From a dermoid cyst it is differentiated by the dermoid, is congenital in origin, and is hardly ever attached to the skin.

Malignant degeneration (carcinoma of a sebaceous gland) is rare, but should be suspected if a draining sinus persists and fails to heal after incision of any superficial abscess of the skin.

Treatment.—They are readily removed by excision. The sac must be completely removed or the cyst will re-form. The capsule should therefore be dissected out without opening if possible, but if the capsule ruptures during the operation, its contents should be evacuated and the sac then peeled out.

LIPOMA

Lipomata are soft, fatty, fairly well circumscribed subcutaneous tumors of the buttocks. When found within the rectum they develop in the submucous layer and spread out in the rectal wall or may become pedunculated. Besides arising in the buttocks, lipomata have a predilection for the neck in the male and the breast in the female. They are frequently multiple, a hundred or more, and ordinarily remain benign. They grow very slowly and after reaching a phase of equilibrium they increase no further in size. The growth is to some extent movable beneath the skin, but tends to merge gradually into the surrounding normal tissue. Occasionally the tumor is deeply situated between the muscles and can then be recognized only by x-ray. They are essentially tumors of adult life, but their occurrence in childhood is not uncommon and they may even be present at birth.

Treatment.—Lipomata are definitely benign tumors and may safely be ignored unless they enlarge or cause disfigurement or discomfort. In rare instances sarcomatous degeneration occurs in advanced life. This is probably due to long continued irritation.

External lipomata on the buttocks are removed by an incision in the long axis of the tumor. As the tumor is usually adherent to the skin, it is often necessary to excise an elliptical strip of skin with the lipoma. It is necessary to apply pressure by a firm bandage over carefully arranged dressings in order to obliterate the cavity. In the case of very large tumors, drainage for the first forty-eight hours will be desirable.

A lipoma within the bowel, even though pedunculated, must be carefully dissected free and its base carefully ligated because of the possibility of invagination of the peritoneum into the intestine. The wound is then closed with sutures. Although the dissecting out of a lipoma is usually a simple procedure, the surgeon is often impressed with the abundant vascularity of the growth. Each lobule grows about a separate branch of the nutrient vessel.

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SOME CLINICAL STUDIES IN STERILITY IN MEN

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It has been said, and truly so, that more knowledge regarding the processes of reproduction has been accumulated since the beginning of the present century than all that was acquired previous to that time.

We believe that the urologist because of his training and interest, is the logical person for a proper appraisal of the reproductive capacity of the male and for the examination of the semen—the chief clinical evidence of his fecundity.

This study is based upon a clinical examination of 150 men—men whose marriages had proved barren, although they used no contraceptive measures for a year or longer; and men who were unmarried but, for various reasons, considered themselves sterile.

The ages of these men varied from 20 to 68 years. Two were 20 years old; 38 were between 21 and 30; 63 between 31 and 40; 24 between 41 and 50; 13 between 51 and 60; and ten over the age of 60. Forty-two, or 28%, of the patients were single; 74, or 49.2%, were married but childless; while 34, or 22%, had one child or more, but subsequently their marriages were barren.

Twelve of the last group gave histories of

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gonorrheal infections, syphilis, inflammation or traumatism of their testes acquired after the birth of their last child, which they submitted as a possible cause of their present sterility.

The remaining 21 patients could neither suggest the cause, nor fix the onset, of the loss of their procreative power.

In studying this series of cases, I was particularly interested in investigating the etiologic relationship between sterility and gonorrheal infection. I, therefore, divided the series into two unequal groups.

Group 1 comprised those cases without the history of neisserian infection; and group 2 comprised those with the history of gonorrhea.

In group 1 there were 40 patients. All of them denied having had any antecedent venereal disease. Seven of them stated that they had never had any sexual contacts. All of them submitted rather vague, and often bizarre, complaints as reasons for their examination. Many of these complaints were obviously irrelevant and were but manifestations of functional neurosis or of inherent neuropathy.

I have divided this numerically small group 1 into the following sub-groups:

(1) In this subgroup there were eight men; six were single and two had been recently married. With these patients there was an absence of the history of any previous genital disease or disability. They simply had a premonition, or, in popular parlance, a "hunch," that they were sterile. Usually they alluded to their barren stock, stating that their families were "poor breeders." Examination, however, revealed evidences of chronic prostatovesiculitis with oligonecrospermia in one case. In a second case, examination revealed evidences of bilateral atrophy of the testes and epididymis, probably congenital. His semen showed complete azoospermia. In a third case, the patient refused a detailed examination. The remaining five patients were apparently normal and had negative seminal findings.

(2) In this subgroup five patients admitted being excessive masturbators. They were convinced that their "youthful errors" had rendered them incapable of procreation. All of them gave histories of persistent spermatorrhea. Two of them had varicoceles. Three of them, on endoscopic examination, had markedly congested verumontanum. Their semen showed oligospermia and some amorphospermia. The rest apparently were normal, with no demonstrable genital or seminal disorders.

(3) In this subgroup there were three patients, admittedly alcoholics. Their examinations were negative; excepting a chronic nonspecific urethritis in one case.

(4) In this subgroup five patients complained of diminutive gonads. One, aged 20, was eunuchoid in appearance. He had testes the size of a cherry, though with well developed epididymi. Examination showed that both testes were translucent. Aspiration yielded only a serous liquid, showing the absence of testicular tissue. The prostate was barely palpable and there was a lack of prostatic elements in the expressed secretions. Examination of a condom specimen revealed a complete azoospermia. Two other patients in this subgroup had grossly hypoplastic testes, following operative trauma—herniotomy in one case and injection treatment for bilateral inguinal hernia in the other. The first patient had unilateral compression of the cord and showed negative seminal findings. In the other case there was a complete azoospermia. In the fourth case, both testes were retained in the inguinal canal. The semen examination was negative. The fifth patient was a world-war veteran. He observed a gradual diminution in the size of both his testes following a severe attack of gas poisoning. Examination of his condom specimen showed a complete azoospermia.

(5) In this subgroup five patients gave histories of repeated x-ray exposures. Two of them were technicians; and two were dentists who had used the roentgen rays routinely and extensively. On palpation their testes appeared normal. Seminal examination showed azoospermia in one case and oligonecrospermia in another. In the other two patients the semen was negative; but, in these cases, there was no follow-up. The fifth patient was a married man, aged 32, who was previously fertile. Recently, he had submitted to six x-ray treatments to the perineum for pruritus ani. The dermatologist who administered these treatments supposedly had adequately protected the patient's scrotum with a heavy piece of rubber. Examination of a condom specimen revealed only occasional non-motile sperma-

tozoa. He was treated with anterior pituitary-like principle. Reexamination, six months later, showed almost a normal quantity of actively motile sperms.

(6) This subgroup comprises 14 cases of "senile sterility." These patients feared that they were too old to procreate. The ages of these self-confessed old men ranged from 45 to 68 years. Examination showed the following results: four patients, between the age of 45 and 50, were apparently normal and, probably, were fully capable of procreation. Of the ten patients between the ages of 50 and 68, four had hypertrophied prostates; two, atrophic testes; and two, bilateral fibrous epididymitis. Examination of their seminal fluids showed necrospermia in two cases; oligozospermia in three cases; and azoospermia in two cases. The remaining cases showed a normal amount of well-formed and actively motile spermatozoa. As is known, spermatogenesis in men continues far into the senile period. On numerous occasions I have examined the semen of men past 70 years of age in which the entire microscopic field was filled with normally formed and actively motile spermatozoa.

Group 2. The second, and larger, group of this series of cases with which this paper is concerned, consisted of 110 patients who gave histories of antecedent venereal diseases.

Five of them had syphilis; six had syphilis and gonorrhea; nine had gonorrhea and, in addition, had sustained some injuries to—or diseases of—the testes. Or else they suffered from constitutional diseases or conditions which might have affected their normal spermatogenesis. In the remaining 90 cases, gonorrhea was assumedly the sole anamnestic factor contributing to their alleged sterility.

Syphilis cases were all in the latent stages of the disease, and had strongly positive serologic findings. Examination of their semen showed oligozoospermia in two cases; necrospermia in one case; and amorphospermia in two cases. On dark field illumination, trepanema pallida were not found. Kemp,[1] in a recent article, reported finding spirochetae pallidae in the semen of 13 patients in a group of 67 untreated, or inadequately treated, cases of early secondary lues.

Fifty-four patients with the history of gonorrheal infection had only one attack of the disease; 35 had two attacks; and 16 had three or more attacks. The dates of these attacks varied from one to 40 years; in 12 patients, from one to three years; in 26 patients, from four to eight years; in 32, from nine to 14 years; in 17, from 15 to 20 years; in ten, from 20 to 26 years; in six, from 27 to 32 years; and in two, from 33 to 40 years.

Fifty-six patients gave histories of bilateral, gonorrheal epididymitis. Forty-one of them, on examination, showed thickening, scars or nodules in one or both epididymi; 11 on the left side, eight on the right and 22 bilaterally. Examination of the prostates and vesicles and of their expressed secretions showed some evidences of chronic inflammatory involvement in the majority of these cases.

Examination of seminal fluids revealed oligozoospermia in 26.8% of these cases; azoospermia in 38.4%; necrospermia in 5.3%; and apparently normal spermia in 28.5%.

Comparing these figures with those of other investigators we find that Frank[2] reported azoospermia occurring in 88%, following bilateral epididymitis; Benzler[3] in 65%; Read[4] in 56%. Benzler examined a large number of German soldiers during the world war and found 23.4% of sterility amongst those who had had unilateral gonococcal epididymitis. Sinety and Hirtz[5] state that even if the inflammation of the epididymis is one-sided, the patient usually becomes sterile as a consequence.

Examination of the remaining 34 patients who had suffered from one or more attacks of gonorrheal infection without epididymitis, in 15 cases showed evidences of chronic prostatovesiculitis. Analysis of their semen revealed oligozoospermia in 38.2%; azoospermia in 16.9%; necrospermia in 9.6%; and normal spermia in 35.3%. The entire group of 150 cases showed, apparently, normal semen in 42.6%; oligozoospermia in 16.9%; azoospermia in 28.8%; and necrospermia in 12%.

Examination of the external genitalia of these patients showed the following local defects:

Cryptorchism: seven cases.

Testicular hypoplasia (bilateral): five cases.

Atrophy of testes and epididymis (bilateral): one case.

Orchitis (old): two cases.

Spermatocele: four cases.

Epididymitis (bilateral): 24 cases.

Epididymitis (unilateral): 21 cases.

Varicocele: nine cases.

Hypospadias: three cases.

Total local factors: 76.

Spermatozoic criteria of male infertility rest on the phenomena of (a) aspermia; (b) azoospermia; and (c) necrospermia.

Aspermia, or aspermatism, is a very rare condition in which ejaculation of semen is wanting; either during nocturnal pollutions, during or after coitus, or on masturbation. Absolute aspermatism would imply an entire absence of secretions, after an orgasm, from the testes, epididymis, prostate, seminal vesicles, Cowper's or urethral glands. Obviously this is not likely to occur excepting in the case of complete closure of the urethra; or in the case of inflammatory destruction of all the above mentioned structures. Ejaculatio defficience seems to me a better term because it defines the exact defect in question.

Azoospermia is the second absolute proof of male infertility. It was present in about 25% of men in this series of cases. A total azoospermia indicates (1) complete gametogenic failure, that is, aspermatogenesis, which is true azoospermia; or (2) a blockade or injury to the sperms in their passage through the genital tract, or a false azoospermia.

To differentiate these two conditions we may (1) do a testicular tap; which is always a painful procedure and, in my hands, has proven rather unsatisfactory; or (2) we may make use of Ulzmann's observation to the effect that spermatozoa that leave the testes alive have straight, outstretched tails; while those that die in the transit usually have coiled or twisted tails.

Wolbarst[6] states that 72% of azoospermia is of obstructive character. Occurrence of congenital, or idiopathic, aspermoatogenesis is well known.

Temporary, or physiologic, azoospermia is observed on those occasions when no spermatozoa are found at a given examination but are noted subsequently. Manifestly, this observation is significant, especially in medicolegal cases. Of the various causes of this phenomenon, excessive venery is, perhaps, the most common. After repeated ejaculations spermatozoa are usually reduced in numbers, or are entirely absent. In one case, that of a healthy adult aged 30, I found that his semen, after the third closely repeated sexual act, did not contain any spermatozoa. But, after five days of rest the condom specimen showed an abundance of motile sperms. Vecki,[7] however, denies this and maintains that in a strong person, who repeatedly performs the sexual act, the number of spermatozoa, instead of diminishing, increase, and that they are active, well-developed and viable.

Another cause of acquired azoospermia, as we have mentioned, is exposure to the x-rays. As is well known, the spermatogenic cells of the testes are highly sensitive to roentgenization; while the cells of Leydig and Sertoli are not. Depending upon the size and the frequency of the dose, and the susceptibility of the individual, suppression and retardation of normal spermatogenesis may be noted within six to seven days following the x-ray exposure; and within two to three weeks necrospermia or azoospermia may develop.

As a rule, says Huhner,[8] it takes several years before live spermatozoa are again found in the semen. F. Tilden Brown[9] states: "Men, by their mere presence in x-ray atmosphere, incidental to radiography or the therapeutic uses of the rays, after a period of time—as yet undetermined—will be rendered sterile." In some cases the testicles are so sensitive to the action of the x-rays that doses which are ordinarily considered harmless may cause sterility. According to MacKee[10] the fractional doses of "soft" radiation, or the grenz-rays, given at weekly intervals, will not inhibit the function of the testes.

In recent years, electrical modalities, such as diathermy and short-wave radiations, are used increasingly by the profession because of their supposed therapeutic value. Testes are often included in the field of exposure. The effect of the short-wave diathermy and of hyperpyrexia on the germinal epithelium of human testes has not been sufficiently investigated. Recently, Wilhelm and Schwartz[11] studied the effect of short-wave therapy on the testes of guinea pigs. They exposed the testes of 18 guinea pigs to a single short-wave radiation of from 20 to 60 minutes' duration. The testes were then excised and were examined at intervals of from three hours to 80 days after exposure. No evidences of gross or microscopic pathologic changes were observed. Evans and Burr,[12] however, have shown experimentally that a loss of fertilizing power of the spermatozoa may occur despite the absence of any morphologic changes in the seminal fluid.

Necrospermia was present in about 10% of cases in this series. The cause of this phenomenon is still conjectural. At times it challenges the most painstaking investigations of the male sex organs. It is generally attributed to the chemical, bacterial or mechanical hostility of the secretions of congested and inflammed prostate gland and seminal vesicles.

Modern investigators, however, such as Meaker,[13] Vose,[14] Macomber,[15] Huhner,[8] et al., believe that the significance of this factor in the causation of necrospermia is much exaggerated.

Huhner added fresh gonorrheal pus to the semen and found that the activity of the spermatozoa remained unchanged. I have mixed spermatozoa of a healthy individual with secretions of chronic gonorrheal prostatovesiculitis obtained from another patient. I found that transplanted sperms live practically as long as they do in their normal environment. Every urologist, on numerous occasions, has observed cases of gonorrheal or nonspecific prostatovesiculitis which on massage yielded a large number of apparently normal and motile spermatozoa.

According to the present viewpoint, the toxins from diseased prostate and vesicles, like those of any other chronic focus of infection, enter the blood stream, reach the testes and depress, or alter, their spermatogenic function.

The influence of toxic, infectious, constitutional and endocrine factors in altering normal sperm activity is well recognized. One of my patients developed a loss of spermal activity following an attack of influenza. Up to date—six months later—he has not regained it.

Characteristic of necrospermia is the presence of morphologically normal spermatozoa, though in diminished numbers. Caution and suspended judgment, therefore, are necessary in the attempt to interpret this condition when it is accompanied by large numbers of normal-appearing sperms. This may be only a physiologic or temporary phenomenon. Not infrequently, the semen of an individual after prolonged sexual continence, as after a sexual debauch, will show that not only the number of the spermatozoa is reduced but even their motility is largely or entirely suspended.

A patient, M. L., a man aged 47 years, requested a premarital test and an examination of his semen. He denied having had any sexual exposure either of a hetero- or homo-sexual nature; or practicing masturbation since his adolescence. He also denied having ever suffered disease of, or injury to, his testes. His was a clear case of the Oedipus complex. But now, as his mother was dead, he contemplated matrimony. Examination showed that his external and internal genitalia appeared normal. But his semen, obtained by manual friction, showed morphologically normal, but entirely immotile sperms. Three months after his marriage he proudly informed me that he was an expectant father.

Collection of seminal fluid.

Seminal fluid for examination was obtained through (1) coitus condomatus; (2) coitus interruptus, with external emission; (3) prostatovesicular massage and stripping; (4) manual friction; and (5) postcoitally, by aspiration of the vaginal pool.

In each case I usually employ several methods of investigation—at least two. If the findings are negative, I repeat the tests in from three to five days. It is only rarely that I had to repeat the procedure the third time. I strictly enjoined continence for at least a week prior to the examination.

Of the various methods of obtaining the semen for examination, the taking of the material from the vaginal pool is the least satisfactory one. Unless the test can be conveniently made shortly after coitus, it is of limited value, as the spermatozoa are rapidly destroyed by the hostile vaginal flora. To be effective, the test should be carefully performed by the technique recommended by its author. However, I do not believe that the postcoital test—sometimes termed the Huhner test—is the last word of sterility investigation as is claimed by its originator. Yet, the majority of clinicians in this country place much stress upon it and think that it is essentially informative.

External emission or withdrawal, and the ejaculation of the semen into a prepared specimen bottle, may not be the most esthetic method of collecting this material for examination, but it is, nevertheless, a very serviceable one.

Prostatic massage and vesicle stripping, as a method for obtaining and evaluating the semen, has definite limitations. In the majority of cases dealt with in this study, the spermatozoa were not found in the prostatovesicular expressions, though they were present in the seminal fluids

obtained by manual friction or by other methods. Obviously, from this method no information can be gained as to the number of spermatozoa or of the total volume of the ejaculate. This is because that at the orgasm these elements are largely augmented by the secretions from the testes and epididymis. However in case of impotency, this may be the only available method.

Manual friction, or masturbation, as a method of collecting the specimen for examination, at times presents difficulties owing to a strong psychological aversion on the part of some patients to it. Either they refuse or are unable to ejaculate owing to the lack of proper erection.

The condom is still the most suitable method for the procuring of seminal specimens and it is as satisfactory as any. Usually I advise my patients to prepare the condom in advance by washing the preservative powder from its inner surface and carefully drying it. I instruct the patient to let the specimen stand at room temperature and to deliver it to my office within two hours—and not later than eight hours—after the ejaculation. The specimen need not be carried at body temperature. The specimen is brought in a paper bag, excepting in extremely hot or cold weather, when the use of a thermos container is advised.

For the purpose of determining the effects of various degrees of temperature on spermatozoal activity, the ejaculates of six young and healthy men, whose semen specimens I had previously examined and found normal, were pooled. I divided them into six equal parts of about 3 cc. each and placed them into six sterile test tubes.

Tube 1 was incubated at 98.6 F.
Tube 2 was incubated at 102.2 F.
Tube 3 was incubated at 112 F.
Tube 4 was incubated at 96 F.
Tube 5 was kept at room temperature 77 F.
Tube 6 was refrigerated at temperature 46.4 F.

The effect of temperature upon semen is recorded in the following chart:

Chart 10. The Effect of Temperature Upon the Semen.

Duration of Motility of the Spermatozoa:

Tubes:	15 Min.	30 Min.	1 Hr.	2 Hrs.	4 Hrs.	8 Hrs.	12 Hrs.	18 Hrs.	24 Hrs.	36 Hrs.
1.98.6F	Highly	Motile	Sluggish						Dead	
2.102.2F	Active	Sluggish	Dead							
3.112F.	Dead									
4.96F.	Highly	Motile							Slight	Dead
5.77F.	Highly	Motile								Slight
6.46F.	Highly	Motile					Slight	Dead		

COMMENTS

The optimal temperature for the spermatozoa is a few degrees below the body temperature. Any elevation, even slightly above the body temperature, impairs their vitality and, in a short time, renders them motionless. At room temperature about 10% of the spermatozoa remained feebly motile up to 36 hours. It is held by some that spermatozoa that are unable to survive eight hours at room temperature are definitely lacking in fructifying power.

However, I have encountered specimens of semen from men with proven good breeding records which at room temperature showed dead sperms only after from five to six hours after emission. On refrigeration at 47 F., they exhibited sluggish motility up to 18 hours. After that, on being warmed up, about half of them became motile.

SUMMARY

Observations of seminal examination of 150 men who were supposedly sterile are here presented.

Causal relationship between sterility and gonorrhea is emphasized. Of 105 patients with the history of antecedent neisserian infection, 56 gave histories, or presented evidences, of complicating bilateral epididymitis. Sperm examination of these patients showed azoospermia in 38.4% instances; oligospermia in 26.8%; necrospermia in 5.3%; and normal spermia in 28.5%. An examination of the entire series of 150 men showed a total loss of fertility in 40% and a partial loss in the additional 16.9% of cases.

The effect of various temperatures on the spermatozoa were also studied. Spermatozoa live longer and thrive better at room temperature than at body temperature. A temperature higher than that of the body is inimical to their life and activity. Low temperature inhibits the activity of the spermatozoa but it conserves their energy. High temperature increases their activity but dissipates their inherent energy.

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PSYCHOSIS DUE TO EXOGENOUS TOXINS—MARIHUANA

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Recently, marihuana smoking in the United States has attracted the attention of psychiatrists, judges, prosecutors and educators.

At present it is estimated that there are more than one hundred thousand marihuana addicts in the United States, majority of whom are of high school age.

HISTORICAL: What is marihuana? It circulates under many aliases. It may be identified locally as reefers, loco weed, or Mary Wanner etc. But all these are merely New World terms for an Old World drug with a record for crime, brutality and insanity as old as history. Marihuana, is a Mexican term for the dried flowers and leaves of cannabis sativa, the commercial hemp plant. In Asia the plant is known as cannabis indica, and the narcotic derived from it is called hashish. In India it is smoked in cigarettes, or the resin is picked off and rolled into pellets which are swallowed as such, or it can be mixed with sugar and eaten as candy. Cannabin, the narcotic of marihuana, is a drug with a reputation for evil which is equally as impressive as that of opium. In the New World the effects of the drug are obtained almost entirely through smoking the dried leaves and flowers of the plant.

PHYSIOLOGY AND SYMPTOMS OF MARIHUANA SMOKING. And what are the effects of marihuana on the human system? The medical profession has been unable to reach any agreed conclusions regarding the physiological action of it on the human system. It has never been proved that a devotee of the drug suffers the same as a morphine addict when he is deprived of the drug, i.e., there is no addiction to it like there is in morphine. It is almost impossible to predict the immediate effects of the drug on any individual. A small dose, i.e.,[2] two or three cigarettes, may bring about intense intoxication, raving fits, criminal assaults. Another subject can consume large amounts without experiencing any reaction except becoming stupified. It is this uncertain effect which makes marihuana one of the most dangerous drugs known. Doctors can prescribe with great accuracy the use of morphine for the relief of pain, predict its action and describe the phenomenon of morphine addiction, however, no prediction can be made as to the effect of even one marihuana cigarette, for it has happened that even this small dose so violently upset one individual until he had a constant urge to kill the members of his family.

Certain physical effects appear to be present in the majority of cases of marihuana intoxication. The first bodily reactions appear an hour or so after taking it, in the form of muscular trembling, heart beat is increased, and pulse is accelerated; there is a ringing in the ears, an intense feeling of heat in the head, dizziness, and sensations of cold in the hands and feet. Constrictions in the chest, dilation of the pupil, and muscular contraction follow. These physical reactions increase in intensity until either vomiting or complete stupefaction occurs, and then the individual goes into a restless sleep. Others react differently towards equal doses of this narcotic, depending on his racial, physiological and emotional constitution and on the amount of the poisonous resin contained in the marihuana he uses.

The mental effect is much more variable, since the emotions and imaginations are stimulated. At the present time, the experiences of the subject, rather than the testimony of psychiatrists, form

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the[3] only basis for a description of marihuana delirium. Although the drug acts on the entire nervous system, it is the higher nerve centers that are affected, i.e., they are depressed, with the result that normal restraint centers are affected first and the individual loses all power to control his behavior. With the restraint center paralyzed one loses the power to refuse, thus responds readily to suggestion from others. Persons intoxicated by marihuana are said, in their language to be "floating," or "high." In this condition their ego becomes greatly magnified. To them, nothing seems impossible. They feel that they are the master of every situation, of every individual. Sound, time and space lose their values. Minutes drag on as hours; ordinary sounds seem as reverberations of thunder; the very room they occupy appears limitless. With senses thus acute, erotic visions are often aroused. Consequently there are numerous cases on record to prove that revolting sex crimes, often involving children are committed by persons high on marihuana. But most dangerous of all is the man under the influence of marihuana at the wheel of an automobile. His illusion of time and space destroys his judgment of speed and distance. When eighty miles an hour seems only twenty, he is capable of leaving a trail of fatal accidents in his wake.

The most harmful anti-social effects of the drug's action occur during the later stages. The emotional excitement leads to uncontrollable irritability and violent rages, and the subject is now under a form of "artificial madness"; the individual may become maniacal or be in a terrible state of temporary insanity that has recently caused several horrifying murders in this country. While suffering such delusions a high school boy murdered an entire family while they slept. Apprehended by officers with a bloody ax in his hand[4] he asked for protection, declaring that someone was attempting to kill him. Later he admitted that he was a marihuana addict and that he was high at the time of the murders. Another lad, while under the influence of this drug, shot down the person he later admitted was his best friend. "I don't know why I did it," he said. "I was high on reefers, and something told me to kill him. I went home and got a revolver and shot him."

Who is responsible for the introduction of marihuana into the United States? The smoking of marihuana was introduced into the states a few years ago by Mexican laborers. Since then the practice has spread rapidly to every state in the Union. There are over 200,000,000 users in the world, according to Lawrence Kolb, Assistant Surgeon General of the U. S. Public Health Service. He states that in the United States the drug is used mostly by unstable people, but it appears to be a well founded belief that many persons with normal nervous constitutions indulge in it occassionally. Some indulge sporadically for somewhat the same reason that some people get drunk on Saturday night or to celebrate on special occasions.

That the fight against marihuana is not merely the work of alarmists is shown in the report of the Federal Department of State to the League of Nations Advisory Committee on Narcotics. The report states in part:

Addiction to marihuana, which was formerly confined largely to the Middle West and Southwest, appears to be spreading. It has now become a problem in the Southwestern and Northeastern parts of the United States. A disconcerting development in quite a number of states is found in the apparently increasing use of marihuana by the younger element in the larger cities. Taken in sufficient quantities, marihuana produces an almost immediate lust, complete irresponsibility and a tendency toward wilful violence. Those who are habitually accustomed to use cannabis frequently develop delirious rage after its administration, during which[5] they are temporarily, at least, irresponsible and liable to commit violent crimes. The prolonged use of this narcotic is said to produce mental deterioration and eventually insanity.

According to Bromberg, there are two classes of mental reactions following the use of marihuana, namely the class that becomes acutely intoxicated and the other where the prolonged intoxication leads to a temporary psychosis. The acutely intoxicated individual may become psychotic from smoking one to four cigarettes, after an interval of one-half to five hours. But regardless of the manner in which it is taken, marihuana is a dangerous drug. It is more intoxicating than alcohol and the abusive use of it is more likely to lead to insanity than the abusive use of alcohol, and possibly also

of cocaine. It is much more harmful in these respects than opium, but addiction to it does not bring about physical dependence as does addiction to opium. The opium addict when deprived of his drug suffers from intense physical symptoms until his body functions are readjusted to abstinence, but the marihuana addict deprived of his drug merely has a hankering for it; he does not suffer physical pain. Because of the seductive ease produced by opium and the physical dependence brought about by a short period of indulgence in it, users of this drug are much more likely to become chronic addicts than users of marihuana.

Marihuana produces a peculiar intoxication somewhat similar to, but more fantastic than, intoxication from alcohol. The devotee takes it primarily for the intoxication, but the drug also releases inhibitions and, as with all drugs that have this effect, stupefaction is the final result. When marihuana smoke is inhaled the subject becomes hyperactive and anxious; he has vague fears and may even fear death[6] and become panicky; this is quickly followed by a feeling of calm, ease, and elation. He becomes talkative and is filled with a vivid sense of happiness. His limbs feel light, his legs and arms may seem to be lengthened and his head much larger than he knows it to be. Sense perception is increased so that colors look brighter, sounds are clearer, sensations are more vivid, and things in general are more beautiful and more interesting than they were before, but they may seen unreal and terrifying; hallucinations of sight are common. Thoughts come quicker and the subject feels that he can see to the bottom of things and solve problems much better, when as a matter of fact he is usually less efficient, but some musicians who indulge claim, with some show of reason and credibility, to have an increased sense of rhythm and beauty with consequent ability to produce better music. Because of the rapidity of thought it may seem to the subject that he has lived hours in the course of a few minutes. He may become hilarious and noisy, and finally dangerous. In some the sex impulse seems to be aroused, probably because the sexual object appears more attractive than before. All of this ends in sleep, and the patient wakes up the next day apparently no worse off for his experience.

Continued use of the drug causes insanity in many cases but very unstable persons may have a short psychotic episode from only a few doses. The insanity may be of several different types, although most patients eventually recover when the use of the drug is discontinued; however there is a form of dementia caused by it from which recovery does not occur. In some of the severe cases the drug has apparently acted as a precipitating cause in persons who were strongly predisposed to mental disease. Insanity due to marihuana is rare in the United States, but common in the Eastern countries where the drug is used excessively. It has been stated that about 25 per cent. of the cases in mental institutions in Egypt and India are due to marihuana, according to Dr. L. Kolb. He also states that the excessive use of marihuana will certainly cause some persons to commit crimes, but the prevalent opinion that anyone who smokes a marihuana cigarette and becomes intoxicated by it will have criminal impulses is an error. Marihuana is in this respect like alcohol, but probably somewhat more dangerous because of the peculiar sensations and hallucinations produced by it. It releases inhibitions and distorts the judgment, and the criminally inclined person with no inhibitions and distorted judgment, is likely to convert his criminal impulses into action, but the normal person who becomes intoxicated with marihuana is like the normal person who becomes intoxicated with alcohol, likely to be a nuisance to himself and to others but not dangerous.

The active principle of the plant, cannabinol, chiefly affects the cerebrum and excessive use results in what is known as cannabism. The plant may be chewed, smoked or brewed. The smoke which is always inhaled is retained much longer than is the custom in cigarette smoking. Price ranges from ten cents each to two for 35 cents. The odor given off is said to be rather distinctive.

At first, as stated previously, the patient loses his power to fully control his thoughts and actions. He becomes distracted, is aware of increased power and energy, and as the indulgence continues, illusions become common, and faces of others often take on grotesque expressions. The individual may become delirious. The predominating characteristics of the patient become magnified, for example; the genial man grows more fond of his fellows, the quarrelsome one[8] becomes more quarrelsome; the timid one more

fearful and the criminal is more bold. Exaggeration is the rule, so that the plainest food may taste delicious and hearing may be painfully intensified. Perception is disturbed in the matter of time and space; minutes seem hours and hours days; to pass over a twig a long step or a jump may be taken. Sensations of pain and touch are diminished, and the pulse rate is increased. With the full return of consciousness no subsequent ill effects are experienced. Marihuana is a diuretic and its use induces hunger. Since the craving that accompanies alcohol and morphine addiction are not present, indulgence can be easily discontinued. There are no known fatalities. Marihuana is said to be a source of inspiration for some writers, painters and other artists.

Dr. H. C. Wood gave a vivid description of his personal experience after taking a large dose of cannabis indica extract. The first manifestation was noticed several hours after, while in the house of a patient during the writing of a prescription; he seemed entirely oblivious of his surrounding; then catching himself, he apologized for what to him seemed a tremendously long time, but the patient assured him he had only been there a few minutes. Returning home, he found himself somewhat excited and with an inward feeling of joyousness. Physical fatigue was banished. Indea after idea raced through his mind. Self control was lost, he laughed and made funny gestures. His legs felt numb, his mouth dry, the pulse was 120, and becoming alarmed, he summoned a fellow practitioner; seeing the physician approaching, Dr. Wood observed that he seemed a vast distance away and a long time coming toward him. His legs felt heavy and pinching them caused no pain. There were periods when he seemed unconscious though it was possible for him to be aroused. A disturbing feeling of personal antagonism between himself and his will power was experienced. Double consciousness was present—a feeling that he was himself and someone else at the same time. There were no hallucinations and no aphrodisiac reactions. Urinary secretion was markedly increased. About eight hours after ingestion, he went to bed and awakened in the morning with a clear mind, though soon after, and from time to time during the day, there were brief fragmentary experiences similar to those of the night before. Except for a marked anesthesia of the skin all day, there were no unpleasant after effects.

PSYCHOSIS DUE TO EXOGENOUS TOXINS—MARIHUANA

CONCLUSION

The exact action of marihuana is unknown at the present time. So far, it can be safely stated, that there is no predisposition to either a dementia praecox or manic-depressive make-up before the patient indulges in marihuana. These individuals are usually of a carefree, thrill-seeking type.

Marihuana is not habit forming in the same sense as opium and its derivatives. It is more like the smoking habit. There is a psychological dependence but no physiological dependence. Naturally, the longer marihuana is used the poorer the prognosis. Conversely, the shorter period of its use the better the prognosis.

I am indebted to the following for their whole hearted cooperation, in obtaining the above material:

Mr. H. J. Anslinger, Commissioner of Narcotics, Washington, D. C.

Dr. Edward F. Dombrowski, Managing Officer, Chicago State Hospital, Chicago, Illinois.

Mayor Edward J. Kelly, Chicago, Illinois.

Lieut. Wm. J. Cusack, Director of Narcotics, Chicago, Illinois.

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3. Kolb, Lawrence: Marihuana, published in July 1938, issue of "Federal Probation."

"Federal Probation."

4. Yawger, N. S.: Our New Addiction, a reprint.

5. Merrill, Frederick T.: Marihuana, the New Dangerous Drug—A recent publication of the Opium Research Committee, Foreign Policy Association.

DISCUSSION

Dr. Milton Goldberg, Manteno: I want to make reference to a point Dr. Nesbitt mentioned which is worthwhile stressing. We see very few of these patients in state hospitals because the most prominent symptom is due to intoxication. We had a couple of cases in this last six months where marihuana seemed to be a precipitating factor; both patients were young and both came in with symptoms of an acute schizophrenic reaction. Both of them cleared up rapidly with metrazol.

Another point to be emphasized is that marihuana apparently does not give enough of a kick to the true psychopaths who, even if they start with marihuana, soon change to another type of intoxicant, usually morphine or cocaine.

Dr. Marjorie Nesbitt, Chicago (in closing): What I want to say and emphasize is that marihuana itself does not cause dementia precox or manic-depressive

psychosis or any other mental pathologic picture. It is not the cause; it may stimulate it and incite the condition. If an individual who had a dementia praecox takes marihuana, those symptoms will come out much sooner than without marihuana, but it is not the marihuana which causes the dementia per se.

MODERN CONCEPTS OF OBESITY

S. Charles Freed, M. D.
From the Department of Medicine, Michael Reese Hospital
CHICAGO

Textbooks usually divide obesity into two types, endogenous and exogenous. The first type arises from some glandular disturbance, while the second is due to dietary excess. A third type of obesity which has received some emphasis lately is the cerebral variety in which lesions of the nervous system, chiefly the hypothalamus, lead to accumulation of fat. This is often considered under the endogenous form.

True endocrine obesity is, however, relatively rare, contrary to earlier teachings. A diagnosis of endocrine disturbance on the basis of adiposity is not uncommon, but strict scientific data in support of such diagnoses are significantly lacking. Often the diagnosis of pluriglandular disease is made simply because of excess fat deposition on the hips and trunk, especially when associated with menstrual disorders. Actual proof of metabolic tests, hormonal assays or other objective evidence remains to be demonstrated in most of these conditions. One should realize that the hips and trunk are the most common sites of fat accumulation in normal persons on an overabundant diet. However, this fact is ignored when a patient is first seen with these fat accumulations, owing to the strong resemblance of these patients to those who have endocrine disorders. It is a serious mistake to suspect any obese person of having an endocrine disorder unless a definite glandular dysfunction can be demonstrated to have preceded the obesity. In this respect it should be remembered that obesity per se can induce ovarian dysfunction such as amenorrhea, dysmenorrhea and hypermenorrhea. These conditions disappear after reduction of weight alone.

ENDOGENOUS OBESITY

Pituitary. In experimental animals, removal of the pituitary does not result in adiposity. Clinically patients with absence of pituitary function (Simmonds' disease) are emaciated. It is difficult, therefore, to conceive of a lowered activity of the pituitary (hypopituitarism) as being the cause of obesity, which has frequently been suggested. It is true that extracts of the anterior lobe have been prepared which have an action in mobilizing fat in the liver and inducing ketosis. These extracts contain the so-called ketogenic factor or fat metabolism hormone. Therefore it may be that an altered secretion of this factor leads in some way to fat deposits which are moved with difficulty, but the evidence at hand for this hypothesis is at present insufficient and awaits confirmation.

The popular habit of holding the pituitary responsible for obesity is due to the well known but too frequently diagnosed Fröhlich's syndrome. In this disorder there are fat accumulations about the hips, trunk, breast and mons veneris but little on the extremities. There is also gonadal infantilism in these cases. It is conceded by most authorities, however, that this is not a pure glandular disease but is usually associated with neurologic lesions of the hypothalamus. This disease can be induced experimentally by producing injury to the hypothalamus or infundibulum. Many boys with undescended testes have been considered to have Fröhlich's syndrome. Many of these boys mature normally, however, and the medication prescribed by the physician often receives the credit for the successful metamorphosis.

True pituitary obesity is seen in Cushing's syndrome or basophilism. The adiposity in these cases is not marked. It is prominent about the girdle region, developing rapidly so as to stretch the skin to form striae. This is quite painful. Certain adrenal cortical tumors produce obesity similar to that found in this condition. The multiplicity of other symptoms such as gonadal disorders, hypertension, polycythemia and osteoporosis leaves little doubt as to the diagnosis.

Thyroid. The thyroid gland has been considered the source of innumerable cases of obesity. Actually, it is seldom the offender. It is true that hypothyroidism may result in increase in weight, but this consists chiefly of accumulation of fluid in the tissues. In severe cases of hypothyroidism fat depositions on the neck and shoulders may take place, but the incidence is relatively low. It is common practice to subject

obese patients to a basal metabolic test. If the rate is low, the physician is likely to feel that the patient has a hypothyroid form of obesity. It should be remembered that basal metabolism tests in obese patients are often false because they show a lower result than the actual basal rate. The basal rate as usually determined is the average ratio of oxygen consumption between the relatively inert fatty depots and the other more actively metabolizing tissues of the body. It is seen, therefore, that to make up the average, the muscles, liver, heart and other organs are in fact working at a higher rate than normal even though the average may seem low. When basal metabolism tests are calculated on ideal weight, most obese patients have high basal rates and few have low ones. It is readily seen that thyroid therapy actually aggravates an already increased activity of vital tissues. Since the obese patient is overworking at rest, the actual energy output of an active, overweight patient is still in great excess of normal owing to the added weight load. It is therefore a dangerous procedure to administer thyroid to such an overworked individual. Definite symptoms of hypothyroidism must be present before the obesity can be attributed to this condition. Skin, hair, cardiac and mental changes should be investigated for this purpose.

Gonads. There are few scientific data to indicate that removal or underfunctioning of the gonads is responsible for obesity. Clinical observations have led some physicians to conclude that lack of ovarian function leads to physical inactivity with the subsequent deposition of fat. Instances have been reported in which the adiposity following ovariectomy is localized to the buttocks and thighs, but these cases are rare. It is safe to say that the gonads have little direct effect on obesity.

Water Retention. Some clinicians claim that overweight may be due to retention of water in the tissues. The appearance of a patient with water retention is similar to that of a patient with ordinary obesity. The etiology is unknown. The condition has been described as the reverse of diabetes insipidus.

Other Factors. The ease with which some patients gain weight and the difficulty with which they lose it has led some observers to suggest that certain forms of obesity may be due to disturbances in the transportation of fat. It is the contention of these authorities that much of the food ingested is rapidly swept as fat into the fat depots and locked there. An abnormal fat-mobilizing mechanism does not allow the fat to return to the blood stream except relatively slowly. It has been suggested that this type of obesity may be related to a lack of secretion of the ketogenic or fat metabolism pituitary hormone.

Cerebral Obesity. There is little doubt that certain lesions of the brain may result in severe adiposity. The condition has been produced experimentally by injuring the hypothalamus or infundibulum. It has been observed clinically in patients with tumors near the pituitary, following attacks of encephalitis, chorea or other forms of brain injury. The exact mechanism is not known, but the evidence at hand warrants the conclusion that there may be a nervous control of the fat mobilization mechanism.

EXOGENOUS OBESITY

Undoubtedly most obese persons are relatively normal from an endocrine or metabolic standpoint. They simply eat more food than the body can expend in the form of energy and hence store it.

However, some people are thin although they eat voraciously, while others remain fat on a moderate diet. It is the balance between food intake and energy expenditure which determines the storage of fat and not the absolute amounts of food eaten. The thin person, even though eating a relatively large amount of food, is usually quite active, even when supposedly at rest. This type of person fidgets continuously and has many unconscious motions. He is unable to relax completely. The person who tends toward obesity, on the other hand, is completely at rest a good part of the time and is thrifty with his energy. This type of patient loses weight only on strenuous dieting.

The fat distribution from overeating may simulate almost any form that is ascribed to the endocrine disturbances mentioned previously, and for that reason caution should be used in diagnosing endocrine dysfunction on the basis of fat distribution. The presence of ovarian disturbances should not mislead the physician in

this regard, since these may occur secondarily to the adiposity.

Obesity is not a simple disease, although the mechanism is often elementary. If one investigates why patients overeat, one is amazed at the variety of causes for this performance. Social, economic and psychic factors play important roles in this respect. Some people overeat owing to being reared in an environment where food is eaten in large amounts and where good judgment regarding table manners is lacking. Poor people tend to overeat because of their background in which food is such an all-important and vital element in their lives. Certain psychic patterns are often responsible for overeating. This may vary from an escape mechanism for mental conflicts to the psychiatric disturbance of bulimia. In the latter condition, appeasement of appetite is not obtained, no matter how frequently or how much food the patient eats. This has been explained as a form of anhedonism in which there is an inability to obtain satiation of sensory desires. Many people who derive enormous pleasure from eating often lack other interests in life or have a great deal of idle time. An interesting form of overeating is frequently seen in young women who retreat behind the wall of obesity as an escape from competition for masculine attention. In this way there is established a subconscious alibi for not being attractive to men. Many other interesting psychologic features may be noted if looked for by the psysician. In one case I observed, a young girl gained rapidly to 240 pounds as a means of "getting even" with her mother who married again soon after the girl's father died. The girl took this means of demonstrating her hostility to her mother because she knew it embarrassed her mother considerably to have such a fat daughter.

TREATMENT

There is hardly a condition in medicine to which can be more appropriately applied Shakespeare's, "If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages princes' palaces." Everyone knows that to reduce one must eat less, but it is usually difficult to follow this teaching. The habit of eating is often so strongly entrenched as to resemble an addiction comparable to the use of tobacco, alcohol, narcotics or other habit forming drugs.

One of the most important means of causing an obese patient to reduce is to demonstrate a definite advantage or incentive for this action. In young girls the cosmetic and social aspects of an attractive figure should be stressed. In elderly people, the dangers of overweight to the cardiovascular system should be disclosed. Men are quite responsive to the argument that life insurance companies refuse to grant insurance to obese individuals and that the longevity tables indicate the improbability of ripe old age to fat people. Children are frequently difficult to deal with because of their inability to comprehend the seriousness of these arguments and their relative lack of control over strong animal impulses.

The important element in reduction of weight is to lower the level of food intake below the amount necessary to maintain body weight.

This is also true of the endocrine or cerebral types of obesity. Except for the clearcut hypothyroid case in which thyroid extract is given, dietary restriction is the main treatment. Certainly cultivation of new food habits is the only method of gaining permanent effects. There is little to be gained by stimulating metabolism artificially for a short time, since weight is regained after cessation of treatment if the patient's food habits remain the same.

It is worth while investigating the psychologic causes for overeating, since once they are pointed out to the patient they may be avoided more readily. In this respect, the physician must assume the role of the psychoanalyist.

55 East Washington Street.

WHETHER WE CONSIDER TUBERCULOSIS and many other diseases which appear more frequently in the workers as non-industrial, partly industrial, or having no relation to industry, any means that decreases their incidence among workers also decreases the occurrence of disease among the general population. This is particularly true of tuberculosis. Ohio Indus. Hyg. Bull, Sept., 1939.

COMMUNICABLE DISEASE CONTROL IN SCHOOLS must be a cooperative activity of the practicing physician, the school medical staff and the health officer. Protection of the public health can be provided only if each utilizes to the fullest possible extent, tested methods of control and maintains a receptive but critical attitude toward proposed activities in this field.—Stebbins, Ernest L., N. Y. State Med. Jour., Dec., 1939.

Society Proceedings

COMING MEETINGS

March 12—Lake County Medical Society, Abbott Laboratories, North Chicago, 8:00 P. M. Dr. Stanley Gibson, "Heart Disease in Childhood."

March 12—Effingham County Medical Society, Benwood Hotel, Effingham, 6:30 P. M. Dr. Harvey S. Allen, "Hand Infections" with motion pictures.

March 12—Bond County Medical Society, Thomas Hotel, Greeneville, 7:00 P. M. Dr. Craig Butler, "The Premature Infant" and Dr. W. C. Scrivner, "The Management of Obstetric Hemorrhages."

March 12—Knox County Medical Society, Galesburg Club, Galesburg, 6:30 P. M. Dr. Henry Buxbaum, "Prolonged Labor."

March 13—Coles-Cumberland County Medical Society, Mattoon, 6:30 P. M. Dr. George L. Drennan, "Rheumatic Heart Disease."

March 13—McDonough County Medical Society, Lamoine Hotel, Macomb, 6:15 P. M. Dr. Guy VanAlstyne, "Biliary Tract Surgery."

March 14—Whiteside County Medical Society, Johnson Tea Room, Sterling, 6:30 P. M. Dr. Clifford J. Barborka, "Medical Management of Gall Bladder Disease."

March 15—Will-Grundy County Medical Society, Louis Joliet Hotel, Joliet, 12:00 noon. Dr. Harry A. Oberhelman, "Surgical Diseases in Diabetes."

March 19—Fayette County Medical Society, Evans Hotel, Vandalia, 6:30 P. M. Dr. Richard Paddock, "Safe Methods of Obstetric Anesthesia and Analgesia."

March 22—Will-Grundy County Medical Society, Louis Joliet Hotel, Joliet, 12:00 noon. Dr. Sidney Portis, "Non-Specific Ulcerative Colitis."

March 27—Christian County Medical Society, Taylorville, evening. Dr. W. M. Whitaker, "The Allergic Child."

March 28—Macoupin County Medical Society, afternoon, Skin Clinic and evening meeting with Dr. L. F. Weber, moving picture films.

March 28—Montgomery County Medical Society, Litchfield, clinic at St. Francis Hospital, followed by dinner and speaker, Dr. Loyal Davis.

April 1—Mason-Menard County Medical Societies, Masonic Hall, Mason City, 7:30 P. M. Dr. Philip Schneider, "Vomiting of Pregnancy" and Dr. Clifford Grulee, "Feeding Problems."

April 3—Schmitt Memorial Hospital, Beardstown, 6:15 P. M. Dr. Stanley Gibson, "Rheumatic Heart Disease in Children."

April 5—Will-Grundy County Medical Society, 12:00 Noon, Louis Joliet Hotel, Joliet, Dr. I. Pat Bronstein, "Endocrine Disturbances in Infancy and Childhood."

April 9—Effingham County Medical Society, 6:30 P. M., Benwood Hotel, Effingham. Dr. K. Rose, "Urology."

April 9—Bureau County Medical Society, evening meeting and dinner.

April 10—McDonough County Medical Society, 6:15 P. M., LaMoine Hotel, Macomb. Dr. Lindon Seed, "Tumors of the Neck."

April 12—Will-Grundy County Medical Society, 12:00 Noon, Louis Joliet Hotel, Joliet. Dr. John R. Ballinger, "A Brief on Medico-Legal Law."

April 12—Jersey-Greene County Medical Societies, Colonial Hotel, Jerseyville, 6:30 P. M. Dr. W. J. Dieckmann, "Vanishing Toxemias of Pregnancy" and Dr. Julius Hess, "The Premature Infant."

April 18—The third post-graduate conference sponsored by the Illinois State Medical Society will be held at Dixon, Illinois, beginning with a buffet luncheon at the State Hospital, Dixon, 12:30 P. M. The program will be presented by men from Illinois, Wisconsin, Iowa, Missouri and Michigan. Doctors of northern Illinois are cordially invited to attend.

Marriages

S. Charles Freed to Miss Shirley Kolinsky, both of Chicago, February 11.

Charles A. Gutzmer to Miss Florence Kathryn McArty, both of Shelbyville, Ill., Dec. 31, 1939.

Joseph M. Ruda to Miss Florence Rudzinski, both of Chicago, Nov. 23, 1939.

Ellsworth H. Tanneyhill, Chicago, to Miss Eleanor Meyer, of Mount Olive, Ill., in November, 1939.

Elwyn S. Shonyo, Elgin, Ill., to Miss La Von Abraham, of Chicago, January 13.

Personals

Dr. J. P. Greenhill, February 21, addressed South Bend Medical Society on "Endocrinology in Gynecology."

Dr. Alan R. Moritz, professor and head of the department of legal medicine, Harvard Medical School, Boston, delivered the sixteenth Ludvig Hektoen lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago, February 23, on "Medical Science and the Administration of Justice."

Dr. Joseph C. Beck has been appointed associate dean of education at the Illinois Eye and Ear Infirmary and will devote half his time to supervision of graduate courses. Dr. Peter C. Kronfeld was recently appointed full time dean of education at the infirmary.

January 25, Drs. Ralph A. Reis and Harold J. Noyes, Chicago, discussed "Management of the Puerperium and Its Complications" and "Present Status of Dental Caries from the Standpoint of Knowledge of Etiology, Treat-

ment and Dental Caries as an Index of Nutritional Adjustment" respectively.

A public lecture, sponsored by the Chicago Medical Society and the Chicago Heart Association, was delivered on February 7 by Dr. John H. Musser, professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, on "The Growing Importance of Coronary Disease."

Dr. Ernest E. Irons was chosen president of the Society of Medical History of Chicago, January 31; other officers are Drs. George H. Coleman, secretary-treasurer; Morris Fishbein, editor of the *Bulletin,* and the following councillors: Ludvig Hektoen, James B. Herrick, William A. Pusey, David J. Davis, James P. Simonds and Arthur F. Abt.

Dr. Meyer Brown addressed the Madison County Medical Society on March 1, subject "Headaches Including Migraine."

Dr. Carlo S. Scuderi gave a paper on "Newer Ideas of Colles Fracture" before the Will-Grundy County Medical Society on March 1.

Dr. Louis J. Tint gave a lecture illustrated by photographs in natural color entitled "To and Through Alaska" at the Chicago Academy of Sciences Sunday afternoon, February 4. Dr. Tint introduces a new series of his superb photographs for which he is well known in Chicago.

Dr. H. C. Hesseltine gave a paper on "Urological Conditions in the Obstetrical Patient" before the Jersey-Greene County Medical Societies on February 9.

Dr. L. F. Weber addressed the Lake County Medical Society on "Common Skin Diseases," February 13.

Dr. Henry Irish was invited to speak on "Useful Drugs in Infants" before the McDonough County Medical Society, February 14.

Drs. Frederick R. Schmidt and Italo F. Volini presented the program for the February 15 meeting of the Henry County Medical Society at Kewanee. Their subjects were "Common Skin Diseases" and "Pneumonia."

Dr. Eugene F. Traut gave a paper on "Migraine, Its Treatment" before the Will-Grundy County Medical Society on February 16.

Dr. Arno Leshin was invited to address the Elkhart Indiana County Medical Society on March 7, in Elkhart. Subject, "The Management of Facial Injuries and Jaw Fractures."

Dr. Erwin P. Deisler addressed the Odontographic Society of Chicago February 19 on "Oral Lesions Observed by the Dermatologist."

Dr. M. P. Borovsky gave a paper on "Diseases of the Newborn" before the Fayette County Medical Society at Vandalia on February 20.

Dr. James T. Case was invited to address the Montgomery County Medical Society at Litchfield on February 22 on "Symptoms and Differential Diagnosis of Carcinoma of the Colon."

Dr. Italo F. Volini gave a paper on "Pneumonia" before the Stephenson County Medical Society at Freeport on February 23.

Dr. Irving Stein gave a paper on "Forceps Delivery" before the Menard-Mason County Medical Societies on February 5.

Dr. A. H. Klawans and A. W. Stillians presented a program before the Physicians of Kewanee on February 5: "Gynecologic Difficulties as the Result of Obstetrics" and "Skin Disorders in Children."

Dr. Clifford J. Barborka gave a paper on "Medical Management of Gall Bladder Disease" before the Whiteside County Medical Society on February 8.

Dr. Archibald Hoyne gave a paper on "Poliomyelitis" before the Will-Grundy County Medical Society at Joliet on February 9.

Dr. Leon Unger addressed the Macon County Medical Society in Decatur, Illinois, on January 30. The subject was "Newer Phases of Migraine."

On January 30 Drs. Walter G. Ackerman, Walter DeFrancois and Thomas D. Allen presented "A Symposium on Glaucoma" before The Illinois Valley Ophthalmological Society at La Salle, Illinois.

At the annual meeting of the Chicago Dermatological Society in January the following officers were elected: President, Dr. Herbert Rattner, Chicago; Vice-President, Dr. Lester M. Wieder, Milwaukee, Wisc.; Secretary-Treasurer, Dr. Michael H. Ebert, Chicago.

Dr. Lowell D. Snorf succeeded Dr. James G. Carr as chief of the medical staff of the Evanston Hospital, January 1.

Dr. Bela Schick of New York City will address the Chicago Society of Allergy on March 18 at 8:00 P. M. on the subject of "Allergy and Immunity."

Dr. Irving S. Cutter Honored. Robert R. McCormick, editor and publisher of the *Chicago Tribune,* has given the property at the north-

west corner Lake Shore Drive and Pearson street to Northwestern University "for the purpose of establishing and maintaining a fund, the income from which is to be spent for research in the medical school." The fund is to be called the "Irving S. Cutter Fund for Medical Research," in honor of the dean of the medical school, who is also health editor of the *Tribune*. Dr. Cutter has been dean since 1925 and medical director of Passavant Hospital since 1928.

News Notes

—A joint meeting of the Chicago, Cleveland and Detroit Urological societies was held at the Palmer House January 25. Dr. Charles Morgan McKenna addressed the meeting on "Problems in the Diagnosis of Renal Tumors" and Drs. Harry W. Plaggemeyer, Detroit, and William E. Lower, Cleveland, gave the discussions. Dr. Vincent J. O'Conor spoke on "The Treatment of Renal Tumors" and Drs. Reed M. Nesbit, Ann Arbor, Mich., and James J. Joelson, Cleveland, were the discussants. A clinical meeting was held in the morning at the Billings Hospital.

—A handbook on pneumonia has been published by the state department of health and is available free to physicians in Illinois who send requests to the department at Springfield or to the committee on education of the Illinois State Medical Society, 30 North Michigan Avenue, Chicago. Prepared by the state advisory committee on pneumonia control, the booklet contains in brief but comprehensive form specific, up-to-date information on the diagnosis and treatment of the pneumonias. The technic of utilizing various therapeutic measures is included.

—The Asa S. Bacon Library will be dedicated at the American Hospital Association February 12. The library, formerly the property of the American Conference on Hospital Service, has belonged to the hospital association since July, 1930. The space assigned to it has been remodeled and by action of the board of trustees of the association the library has been designated the "Bacon Library" in appreciation of a lifetime of service which Asa S. Bacon has given to hospital service. Forty-five hundred package libraries are sent to more than 3,200 hospitals and their personnel each year; 300 new books and the issues of fifty-two different magazines are added each year. Mr. Bacon has been superintendent of Presbyterian Hospital for forty years.

—Dr. Conrad S. Sommer, Chicago, director of the Illinois Society for Mental Hygiene, has been appointed to the newly created post of state superintendent of the division of mental hygiene, the Chicago *Tribune* reports. The new division is in the state department of public welfare and was created on the recommendation of the Institute of Medicine of Chicago. Dr. Sommer has taken a year's leave of absence from the society of mental hygiene. In his new capacity he will supervise medical care and treatment of the 30,000 patients in the ten state mental institutions, and will be responsible to the state alienist. Dr. Sommer graduated at the University of Illinois College of Medicine in 1932. He was resident psychiatrist at the Illinois Research Hospital from 1932 to 1933 and fellow at the Institute for Juvenile Research from 1935 to 1937. For the last three years he has been connected with the Illinois Society for Mental Hygiene and assistant clinical professor of psychiatry at Loyola University School of Medicine.

—Dr. Roland R. Cross, Dahlgren, superintendent of the health district in Southern Illinois since 1933, has been appointed assistant director of the Illinois State Department of Health. Dr. Cross graduated at the American Medical College, St. Louis, in 1912. He spent six years in Indian work as a member of the U. S. Public Health Service and served in the World War. He was president of the Jefferson-Hamilton Counties Medical Society in 1931. The position to which Dr. Cross has been appointed has been vacant since 1937, when Dr. Albert C. Baxter, Springfield, present health director, was named acting director of the department.

—Dr. Hamilton Anderson, of the staff of the Council on Medical Education and Hospitals of the American Medical Association, has resigned, effective February 15, to accept a professorship in pharmacology at Peiping Union Medical College, Peiping, China. Dr. Anderson graduated at the University of California Medical School in 1930 and joined the division of pharmacology the same year. He served as

assistant clinical professor from 1934 until 1937, when he joined the staff of the American Medical Association. He engaged in field studies on amebiasis for the university at the Gorgas Memorial Laboratory, Panama, in 1931, and on leprosy at the Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, in 1934. Dr. Anderson plans to sail from San Francisco for Peiping, March 22.

—The clinical section of the Chicago Heart Association met at Billings Hospital, February 23. Dr. Arlie R. Barnes, Rochester, Minn., will be guest at the meeting. The following program has been arranged: Drs. Dallas B. Phemister and Richard Sternheimer, Two Cases of Adhesive Pericarditis Treated Surgically; Dr. Edith L. Potter, Embryological Background of Cardiac Malformations; Dr. Andrew J. Brislen, The Clinical Measurement of Heart Size; Dr. Wright R. Adams, Limitations of Objective Circulatory Measurements; Dr. Louis Leiter, The Relation Between the Heart and Kidneys; Dr. Barnes, Some Important Diagnostic Correlations and Electrocardiograms and Clinical Types of Heart Disease.

—The Illinois State Medical Society will be host to the women members of the state society at a dinner in Peoria Tuesday evening, May 21, 1940. The local chairman of arrangements is Dr. Margaret B. Meloy of Peoria. Membership tickets in the state society should accompany requests for reservations. The following is the tentative dinner program: Short Address—Dr. Elizabeth R. Miner, President, Illinois State Branch, American Medical Women's Association, Branch No. 17. Other addresses by Dr. Nelle S. Noble, Des Moines, Iowa, the President of the American Medical Women's Association; Dr. Bertha Van Hoosen, Chicago; Dr. Elizabeth B. Ball, Springfield; Dr. Esther S. Hodel, Morton; Dr. Carolyn N. MacDonald, and others.

—Please take notice that The Northern Trust Company and Christy Brown, Executors and Trustees of the Will of Bella Christy Brown, Deceased, have leased the premises known as the Kenilworth Sanitarium, 2228 Beechwood Avenue, Wilmette, Illinois, to Christy Brown, Jr., and Dr. Edward J. Kelleher, effective March 1, 1940, and said Executors and Trustees will have no responsibility for the management of said Sanitarium from that date. Dr. Edward J. Kelleher, who has been Medical Director of the Sanitarium for the past three years, will continue in that capacity.

Deaths

Fred C. Cade, Chicago; Chicago Medical School, 1919; on the staff of the Provident Hospital; aged 53; died suddenly, Dec. 11, 1939, of coronary thrombosis.

Alvin Barnard Cary, Donnellson, Ill.; Marion-Sims College of Medicine, St. Louis, 1899; aged 63, died, Dec. 27, 1939, of heart disease.

Samuel E. Embry, Chicago; Louisville (Ky.) Medical College, 1891; aged 82; died, Dec. 26, 1939, of fracture of the femur.

Oscar Emanuel Grant, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; a Fellow, A. M. A.; Fellow of the American College of Surgeons; on the staff of the Swedish Covenant Hospital; aged 60; died, Jan. 4, at Fairhope, Ala., of heart disease.

Maskel Lee, Atlanta, Ill.; Rush Medical College, Chicago, 1888; aged 84; died, Dec. 20, 1939, of heart disease.

Thomas Fulton McConaghie, Oakdale, Ill.; St. Louis University School of Medicine, 1904; member of the Illinois State Medical Society; aged 67; died, Dec. 29, 1939, in St. Mary's Hospital, Centralia, of pneumonia.

Cora L. Emery Reed, Rock Island, Ill.; Hahnemann Medical College and Hospital, Chicago, 1884; aged 81; died Dec. 3, 1939, of chronic myocarditis.

Eugene John Rooney, Chicago; University of Illinois College of Medicine, Chicago, 1927; served during the World War; aged 44; died Dec. 29, 1939, of massive hemorrhage and duodenal ulcer.

Leonard Schreifels, Granite City, Ill.; St. Louis College of Physicians and Surgeons, 1899; member of the Illinois State Medical Society; past president of the Madison County Medical Society; aged 73; died, Dec. 27, 1939, of heart disease.

Simon Peter Schroeder, Nashville, Ill.; Hospital College of Medicine, Louisville, Ky., 1887; member of the Illinois State Medical Society; formerly secretary of the Washington County Medical Society; at one time county coroner; aged 78; died, Dec. 24, 1939, of coronary thrombosis.

Clark Lee Shipley, Paris, Ill.; St. Louis College of Physicians and Surgeons, 1908; aged 57; died, Dec. 24, 1939, of hemiplegia.

Burton J. Simpson, Chicago; Rush Medical College, Chicago, 1900; member of the Illinois State Medical Society; on the staff of the Englewood Hospital; aged 69; died, Jan. 8, of Parkinson's disease, cerebral arteriosclerosis and pneumonia.

Leon Algernon Tancil, Chicago; Howard University College of Medicine, Washington, D. C., 1921; a Fellow, A. M. A.; on the staffs of the Central Free Dispensary and the Provident Hospital; aged 49; died, Dec. 7, 1939, in the Presbyterian Hospital of amyotrophic lateral sclerosis.

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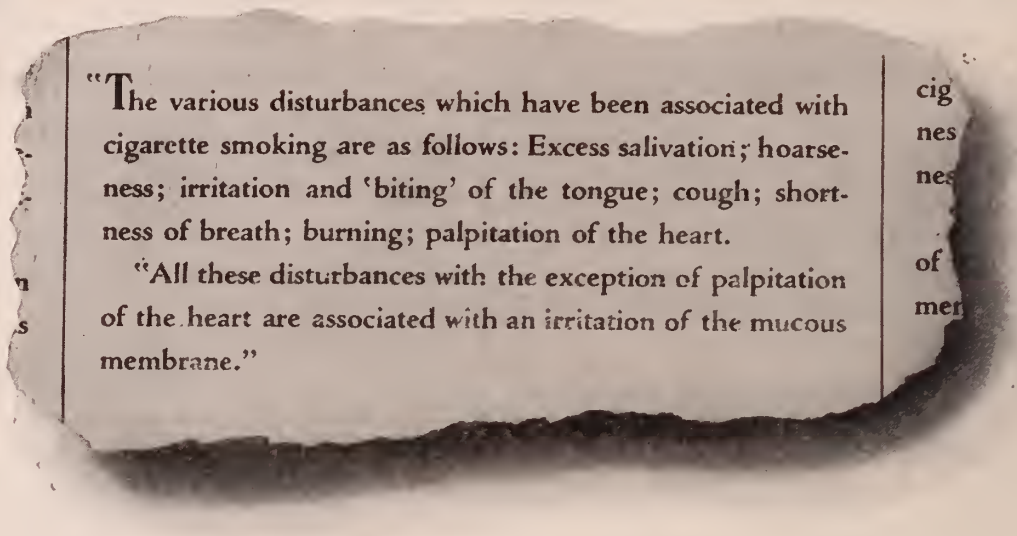
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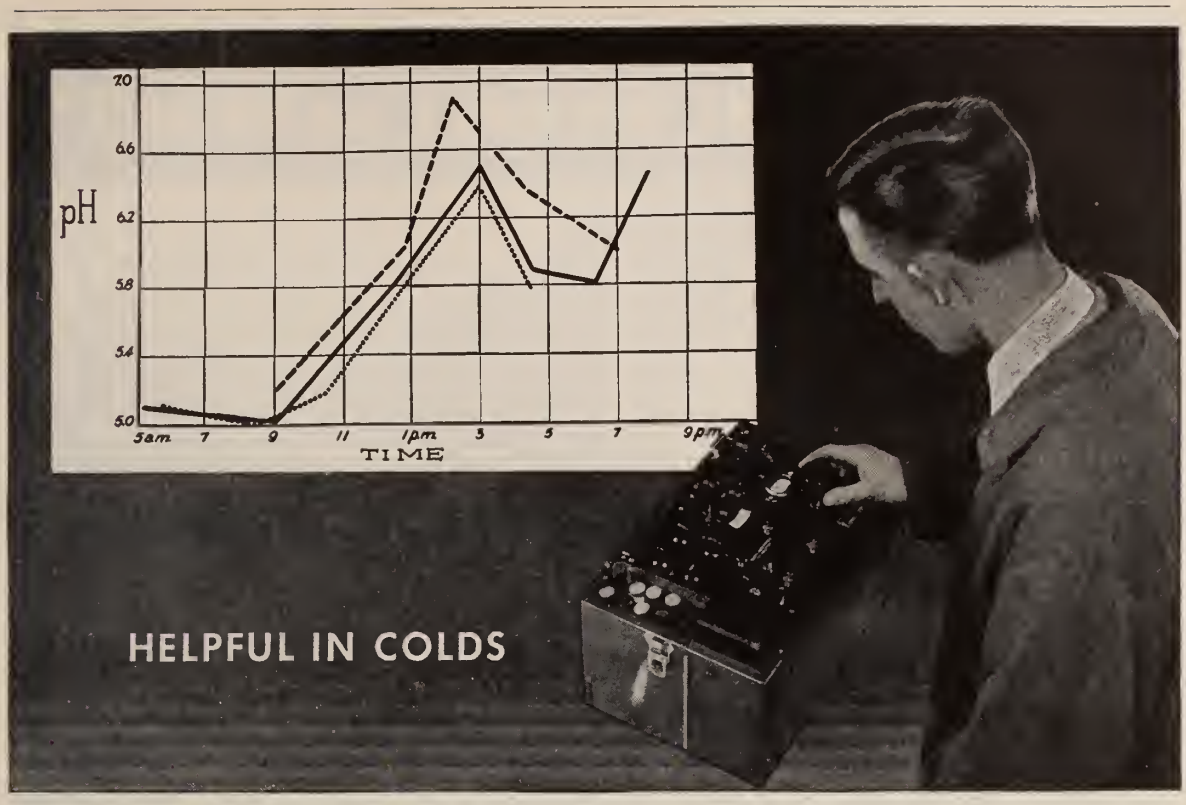
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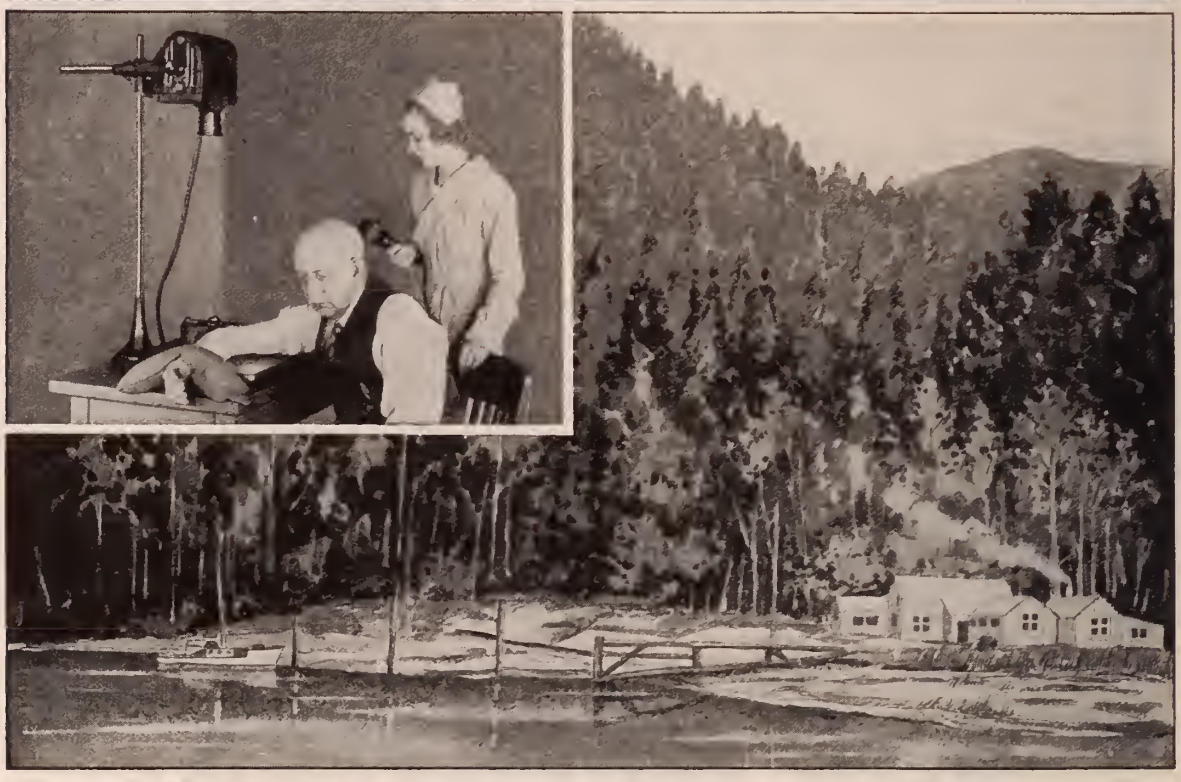
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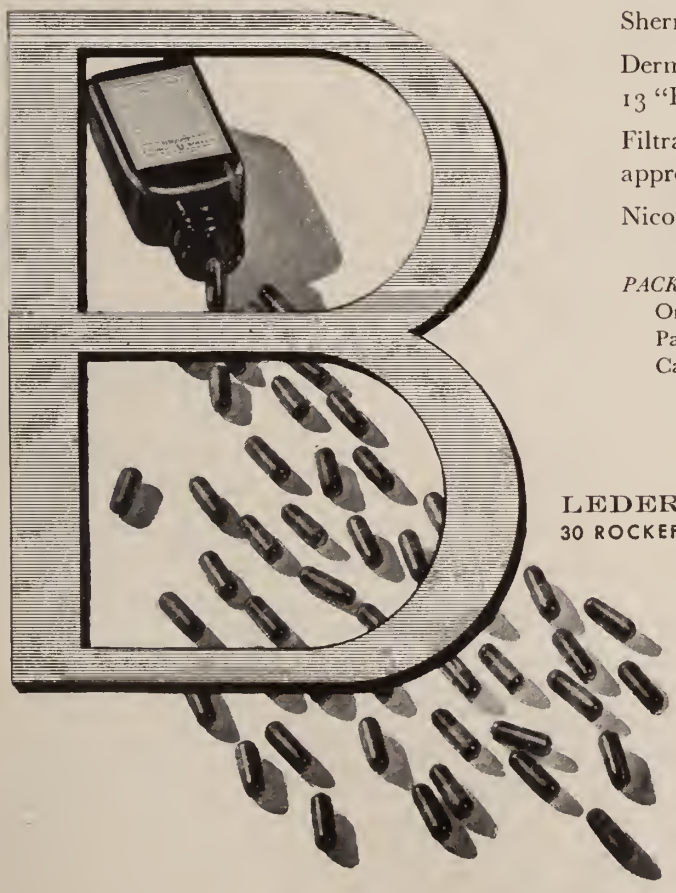
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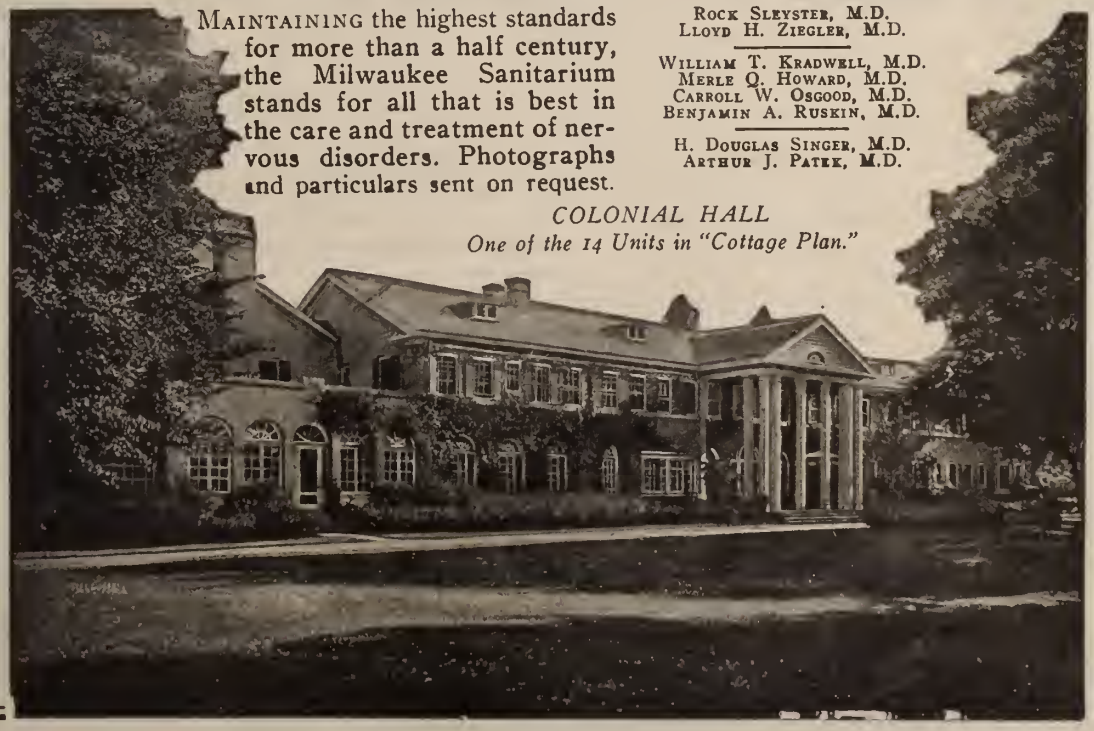
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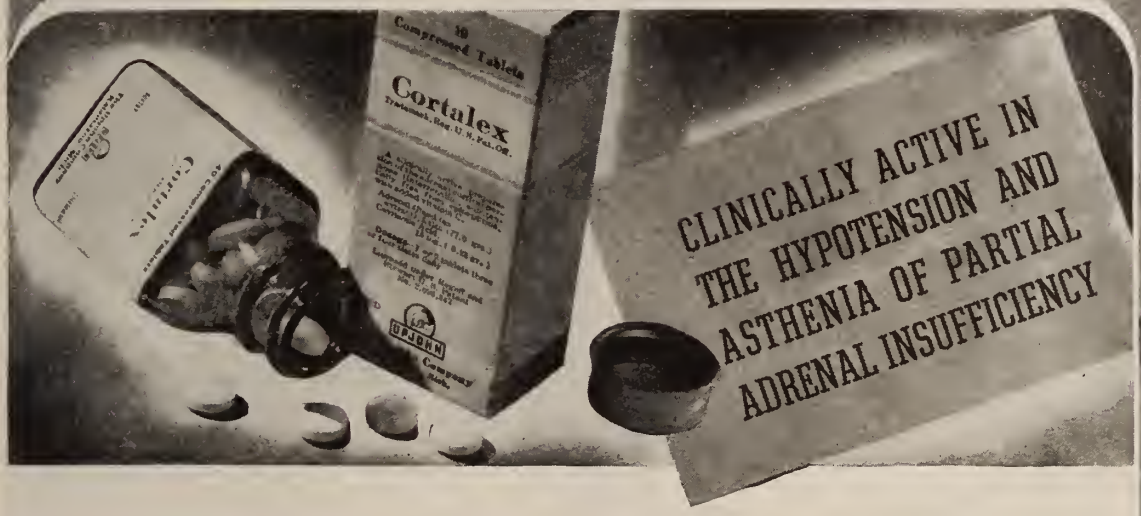
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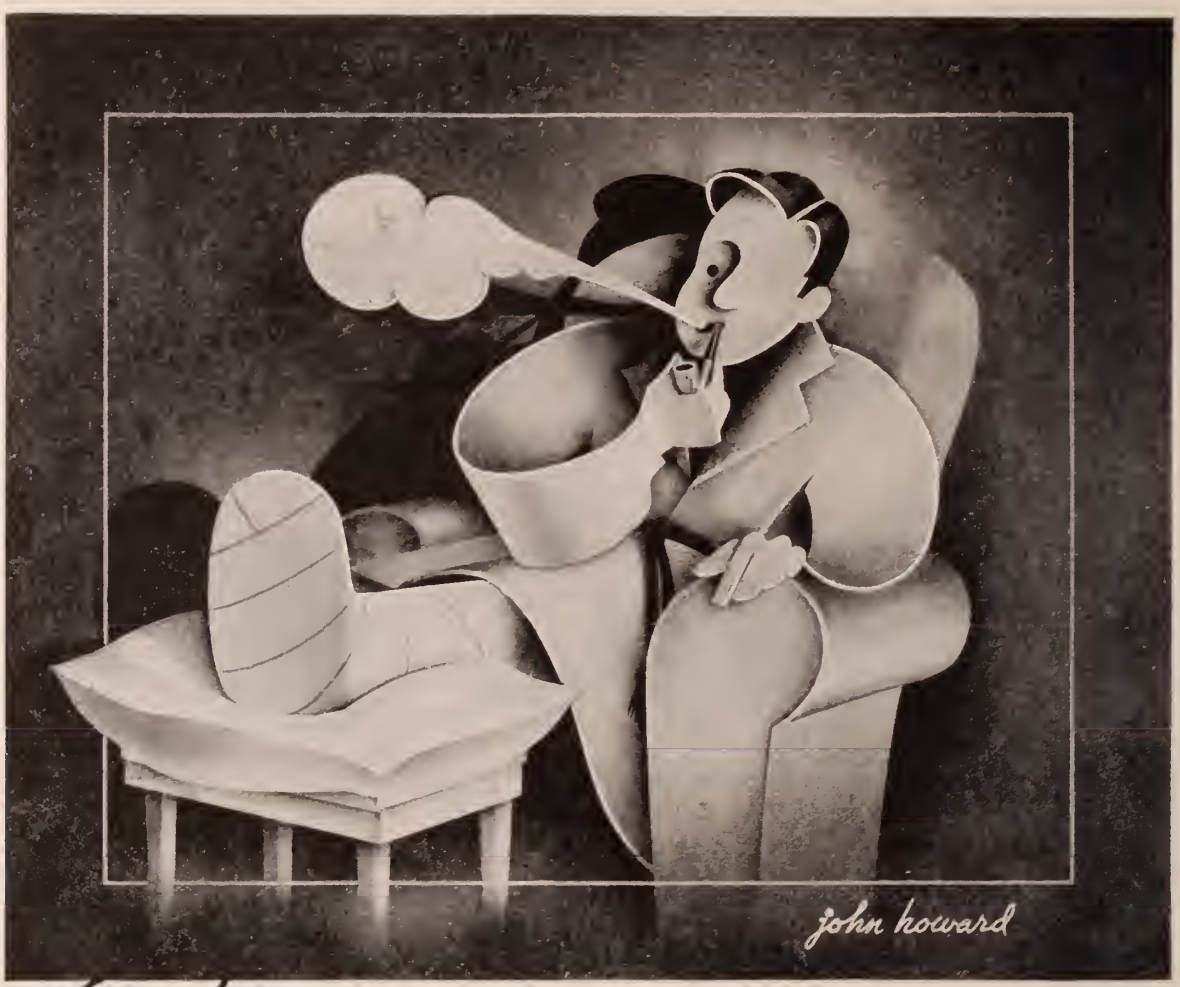
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(1) 1939. The Vitamins, pages 127-140, American Medical Assn., Chicago.

(2) a. 1938. Proc. Soc. Exptl. Biol. Med. 38, 64.
b. 1938. J. Am. Chem. Soc. 60, 1267.
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(5) a. 1936. Missouri Agric. Expt Sta. Research Bull. No. 241.
b. 1938. Biochem. J. 32, 708.
c. 1938. Indian. J. Med. Res. 25, 879.

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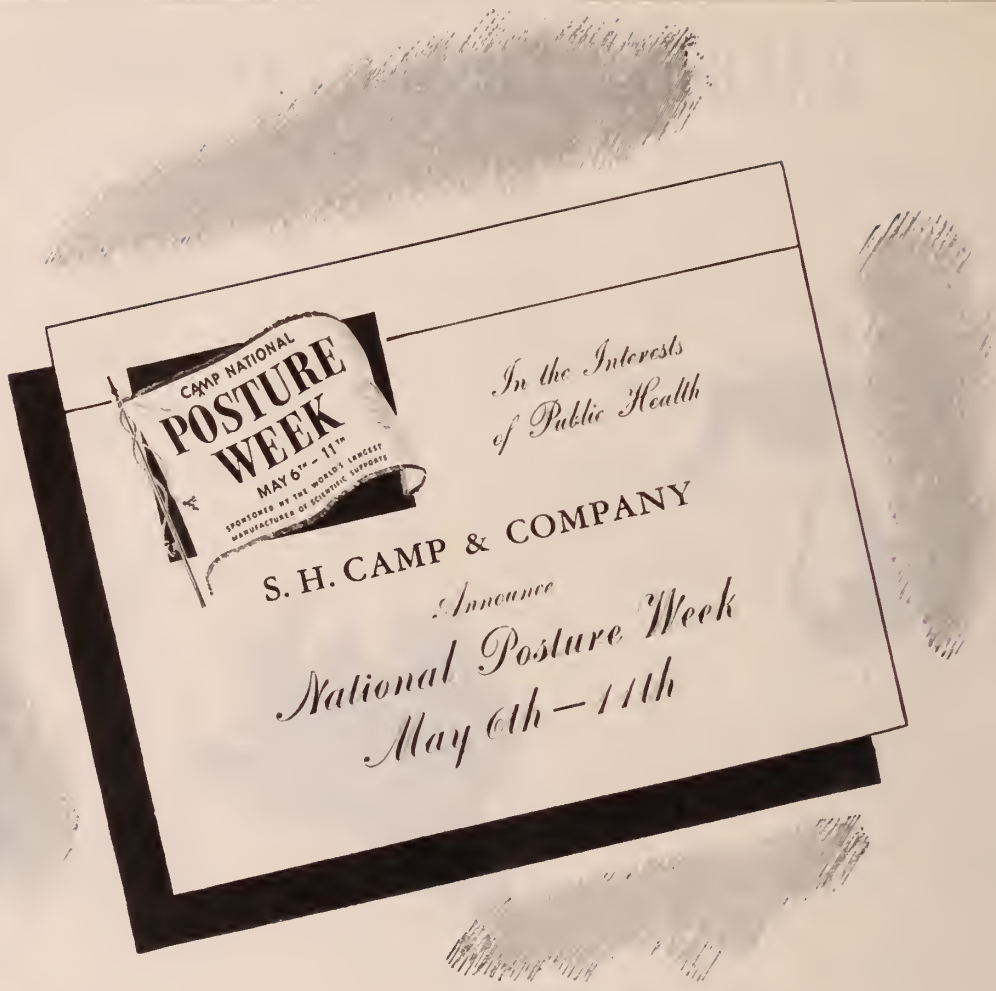
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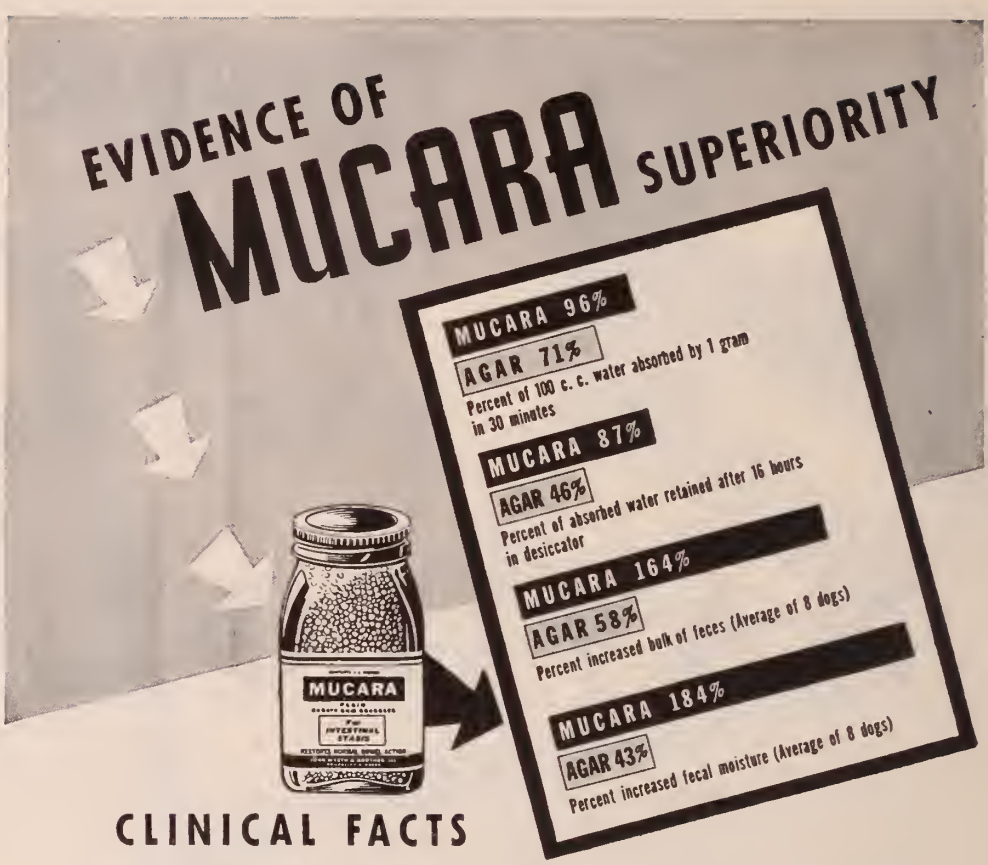
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* American Journal of Digestive Diseases, 5,315, 1938

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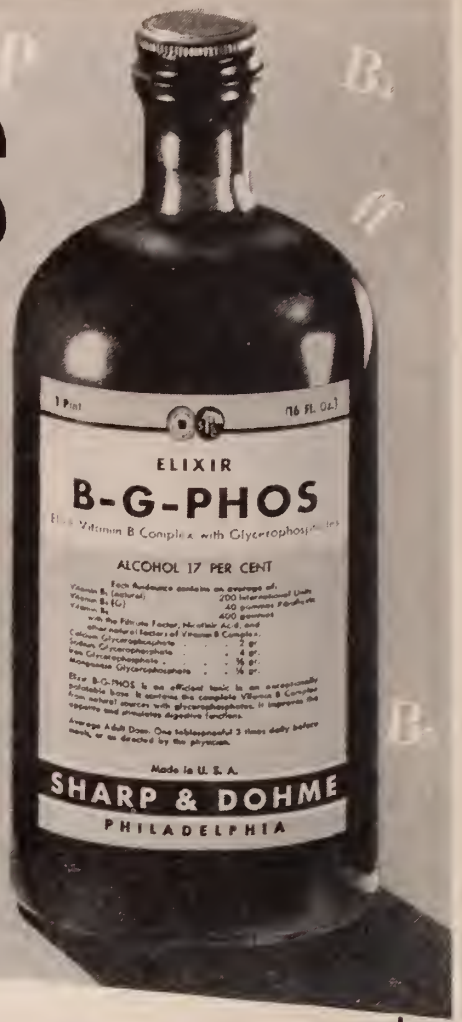
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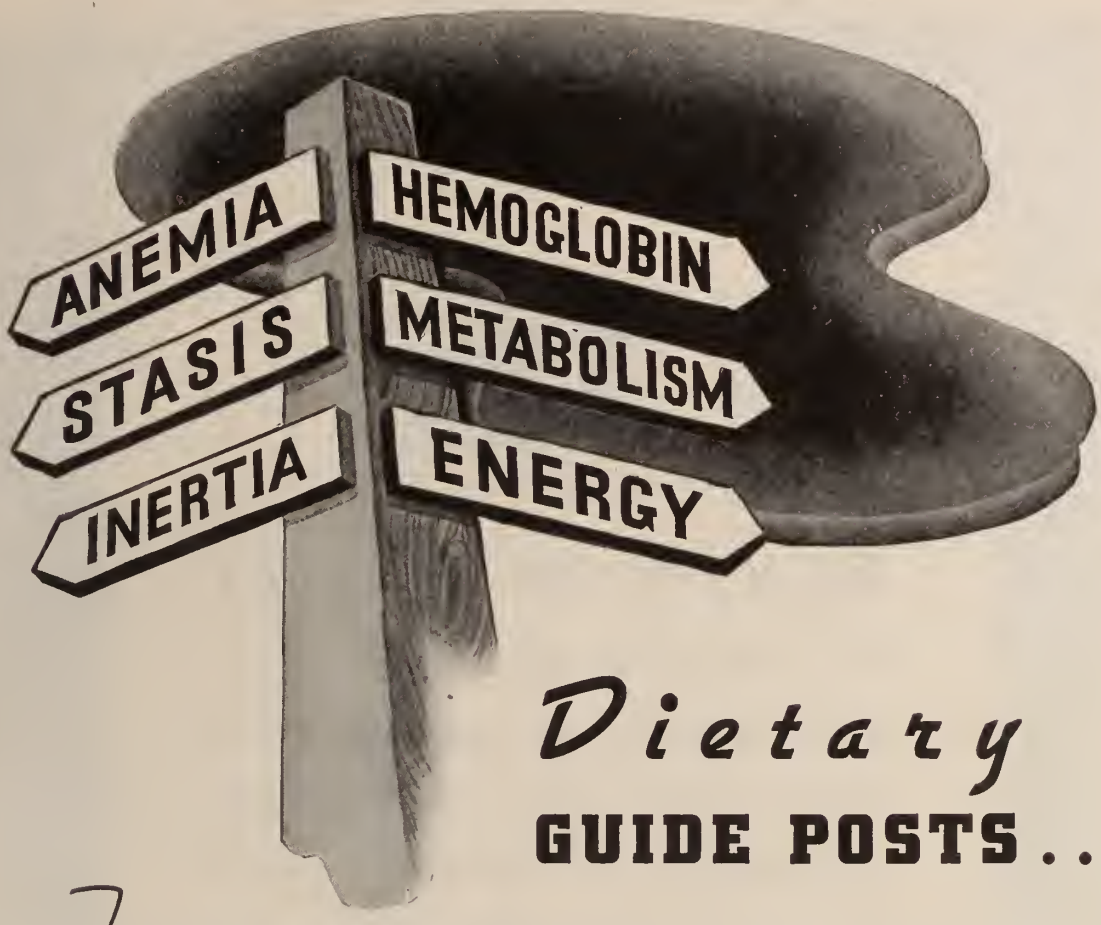
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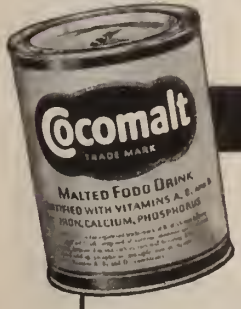
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* Medical Record—149:63:1939 ** Archives of Pediatrics—Nov. 1939

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ILLINOIS MEDICAL JOURNAL

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Editorials

WE HAVE SOMETHING TO SELL

We uote from the Extension remarks of Honorable Samuel B. Pettengill of Indiana in the House of Representatives June 16, 1938, as follows:

Our great failure is that we have stopped advertising the American system to ourselves. I used to think, why is it necessary for Ivory soap to remind me every week that it floats? But I am told that as soon as Ivory soap curtails its advertising program its sales begin to fall off.

What has American enterprise failed to sell? The idea that ours is the greatest liberal Government in the world's history. The only sense that Americans in the mass are conservatives is that they want to conserve their liberties.

Let no one believe that this movement to the center, this abdication of constitutional rights by the citizen, the city, the county, and the State, this concentration of power—let no one be so fatuous as to believe that this is a liberal movement. It is a reactionary, a Tory movement.

Make no mistake! The Declaration of Independence and the Constitution were not written by reactionaries, nor was the Revolutionary War won by Tories.

We have something to sell, both tangible and intangible, and it is as nearly pure wool as this old world has ever been.

The Revolution was not won by summer patriots nor sunshine soldiers. It was won by the bloodstained snow of Valley Forge. The Civil War was not won by the "Don't Stick Your Neck Out Club." It was won by the empty sleeve. The struggle today cannot be won by the "Let-George-do-it" boys. Sacrifice alone built this Republic, and sacrifice alone will save it, if it is to be saved.

Nor can this issue be postponed to await your convenience. The next 5 years, and in part the next 5 months, will almost certainly tell whether you will bequeath to your boys and girls the legacies you received from your fathers.

In Bible times a shibboleth separated friend

and foe. Today we need but one countersign for public service—devotion to constitutional freedom. * * *

OUR GOOD NEIGHBORS

If political legislation and interference are going to invade the practice of medicine we should more than ever curiously pry into the effect of the last six years' political invasion and management on our good neighbors. The physicians' good neighbors are not precisely Central and South Americans but the merchants, manufacturers, farmers, employees, bankers and the professional men of this country. Theoretically each of these groups asks the opportunity to do good work and the chance to secure a return from it adequate for current living and for future days of infirmity. In times of stress and strain and particularly in times of business depressions it is typical of the human mind to seek elsewhere to place the blame. Seldom does the victim of his own cupidity or mismanagement accept in truly adult fashion the responsibility for his own mistakes. Seldom in the midst of a situation such as the recent or current depression with its world-wide causes is a man able to see beyond his neighbors—his immediate horizon. Unwilling then to accept his share of a situation he helped to create, perhaps helped only in a passive way, and not being possessed of far vision he must perforce blame his neighbors.

Thus we come to a situation in which the banks and bankers are held responsible for a financial panic; in which manufacturers and employers generally are thought to be preying on labor; in which merchants and distributors of goods are called profiteers; in which organized labor is blamed for obstructionist and sabotage policies; in which farmers and producers with excesses of their harvests can only at great difficulty achieve profits; and in which professional men are accused of not eagerly offering and arranging their services for the general good. In this latter group largely the lawyers, architects, creative engineers and physicians are included.

But a particular "profession," if such we might term it, has excepted itself from all blame. This in itself has the sound of adolescence about it and truly these individuals are in the youngest group of all. While its ideas are adolescent in character it is just aborning with its immaturity of a mere fifty to seventy-five years. This is the social welfare group. They have, let it be repeated, the right lusty adolescent trait of knowing all the answers. To the credit of the lot there is a corps of serious thinkers and hard workers among them working as agents of the public in the administration of many difficult personal problems. But the group is afflicted with idea men self-appointed and self-admitted geniuses of the public interest. Whereas civilization has had to creep forward through its countless years they are "prepared" to bring it along in leaps and bounds.

Their method is plain—to stigmatize the group to be affected and then to legislate for them on the basis of the stigma.

What have they done for our neighbors? They have legislated the banks into such a sound and liquid state that they can not easily manage their former type of loans which frequently stimulated industry. Their liquidity is bought in low-income government bonds at the behest of a Federal Reserve system which conceivably could, through its influence, have aborted the panic. Current trends indicate that the welfare boys would like to put those other independent "banking" agencies—the insurance companies—into the same constricted position as the banks. With, naturally, the government in control of the assets. It did happen to American life insurance companies in Russia.

Not having a strong finger in industry these "welfare" individuals haven't been able to move in so strongly as into financial circles. But a certain demoralization and sense of insecurity have been created. Taxes on profits, parallel "competition" or domination as in the utilities and the illusion of doing something for labor by taxing the employer have been a constant source of harassment.

The farmer has been treated to a great many economic oddities in the way of crop and market control and subsidies. But the weather and supply and demand haven't yet been controlled and assured for him. Upon these his net income depends. He will doubtless be given other inducements if his political strength is united and organized.

Labor, in general being more manageable than scattered agrarian individualists, has not had the distinction between its political power as a tool in governmental manipulation compared openly with the problems of accomplishing its

aims, of security and so on, by governmental edict. How many years it will take to estimate the possible results to it of the Wagner Act and "social security" measures no one can say.

It appears that labor was achieving more before its leaders appealed to the government for interference in its behalf than it now stands to secure under any scheme involving governmental taxes, bookkeeping and policing. Much had been accomplished by employer-employee negotiation in the twenty years preceding governmental "assistance" to labor. The employer often was at fault: but whenever an organized industry learned that improvement in working conditions improved the profits, changes occurred rapidly. Here and there enlightened companies developed profit-sharing and pension systems. The advancement of conditions for railroad employees probably represented one of the largest group-improvements ever brought about by repeated discussions between railroad managers and employees through their unions. But it looks like much of the remaining good which should be accomplished has been postponed by the government's part in the welfare of labor. The present antagonisms engendered in practically all business-men throughout the country plus their uncertainties regarding tax effects and governmental regulation by other means causes them to be unwilling to initiate wage-raises, pension systems or profit sharing plans which undoubtedly offer most to employees. If they secure it through the government they may find themselves working for the government.

In summary, the idea men of the social welfare group are attempting to put on many of our neighbors the respectability and propriety of government management. But the laws of nature have generally informed us that real improvement in any situation comes from within —not from without. It is one thing to educate bankers, farmers, manufacturers, laborers and professional men to their problems and shortcomings. It is another to attempt to impose "a" or worse "the" solution on them. It is one thing to have to *submit* to governmental regulation; it is another to request of the government, by the group to be affected, permissive or enabling legislation allowing those concerned to work out a self-directed program for their own improvement.

We must inform our neighbors that we desire to continue in our studied way our attempts to improve the *personal value* of the practice of medicine. We must convince them not only of our abhorrence of *political systems* of practice but of our knowledge that subsidizing an easy contact with a physician does not improve the general health.

ACCIDENTS, PREVENTABLE OR OTHERWISE

Accidents, preventable or otherwise, constitute one of the greatest and most calamitous risks of existence.

Aside from the psychological element of personal loss, the economic deficit of the *disabling* accident ranks only slightly less than that of the casualty that is a fatality.

Industrial accidents have decreased materially through protective legislation. Unfortunately the preventable accident, according to statistics indicates material increase.

Even more than illness, accidents are one of the chief causes of physical and economic disability. Reliable statistics show that annually the population of the United States sustains *ten million disabling accidents,* a daily average of about 30,000 and because of which a consequent body of some 500,000 persons is kept from usual daily tasks by accident. Accident fatalities run about 100,000 deaths per annum.

These figures read like the casualties of war.

Another item that calls for thoughtful deliberation is the fact that low income families ($1,000 per annum or less) and those families on relief have the higher proportion of accidents. Two authorities call attention to the fact that in "relief families" *home accidents* were 43% higher than in families running in the $3,000 income class and upwards.

Of "home accidents" it is reported that 59% are occasioned by falls. Such accidents are due probably to disrepair of the buildings occupied, worn or weakened carpetings or furniture, or the inevitable inconvenient and insufficient lighting arrangements of the establishments of the more destitute.

Age too is a factor in accident susceptibility. The seven and one-half million persons of sixty-five years of age or older make up only about 6% of the population of the United States. *Yet it is in this class that fully 25% of the fatal accidents*

occur. Accident prevention in this class calls for more detailed care and attention.

The qualities of age are an increased risk. Broken bones knit more slowly if they knit at all, and the regenerative processes of the entire body are on the down grade by the time a man or woman is 65. Unfortunately to, the very nature, tradition and background of "home" creates such a feeling of security that it is there that the greatest of all accident factors—*carelessness*—thrives!

Women are more frequent victims of the "home" accident than are men, and more prone to neglect the consequences. Though the ratio of frequency of accidents in persons 65 or over is the same in both sexes—i.e.—about 6% of the entire casualty record,—yet there is something like 43% of female fatalities from accident, registered in this age group as against something like 18% for males.

The attached table, taken from a bulletin of the Metropolitan Life Insurance Company, affords interesting study.

Death Rates per 100,000 for Accidents (All Forms). By Sex and Specified Age Periods in the United States, 1934-1936

Age Period	Males	Females
All Ages	114.5	47.8
Under 15	54.6	32.2
15-44	101.3	21.7
45-64	159.3	44.3
65-69	243.9	127.1
70-74	296.5	220.3
75-79	425.7	443.1
80 and Over	842.6	1,168.9

Falls on floors—due to slipping or tripping over a rug or some other minor obstacle, or on stairs, or on the street are annually responsible for about 15,000 deaths among "old" persons in the United States.

Further analyzed this accounts for 70% of such fatalities among women dying from such causes but for only about 38% among men.

When it comes to the question of the something like 5,500 aged persons who meet death annually in motor accidents it is shown that about 66⅔% of these deaths come from pedestrians being struck by cars or vehicles. Impaired hearing as well as impaired locomotion or slow comprehension may be held responsible.

Clothing catching fire at stoves or grates or ignition from pipe ashes results annually in over a thousand deaths—about 1,100 in fact—from accidental burns among persons of 65 or over.

Illuminating gas poisoning is another major cause of "old age accident fatalities." Again is the impairment of faculties responsible.

Despite excellent work accomplished by instruction in "Safety First" the work as yet undone in this direction looms large.

There should be a decrease in home accidents and this should be achieved by simple concentrated persistent instruction.

When the committee of the American Medical Association to Study Problems of Motor Vehicle Accidents met a little over a year ago (i.e. Dec. 1938), it reported that a casualty decrease shown during 1938 was due evidently to education and traffic law enforcement. Recommendation was made at that time for a more rigerous inspection of the *qualifications for drivers* before driving licenses were issued. This included special attention to:

"1. Permanent deficiencies;

2. Transitory deficiencies;

3. Brief and often self-inflicted disabilities from which recovery is usually natural, certain, complete and prompt, such as intoxication; the effect of drugs, lack of sleep, unusual excitement or worry."

Care was urged also in the selection of official agencies for dealing with physical and mental defects as related to driving ability. City, highway and state police departments, and Drivers' License Administrators are these agencies. A higher qualification was suggested for commercial drivers than for the general public. Sensory defects were held to present one of the greatest problems since it is of course necessary to establish the point in deficiency at which the hazards are so great that such a handicapped person becomes a "driving risk."

Keeping a record of all motor accidents and traffic violations sets up a standard by which to judge the merits of a man's right to drive, or of the necessity of either revoking or suspending his driving privileges.

"Transitory deficiencies" that result from effects of medication might be guarded against by having the doctor instruct the patient *to abstain from driving* until a certain time has elapsed after the administration of any drug that might produce vertigo, drowsiness or nausea or general temporary imbalance.

"Driving while intoxicated" is now a legal crime practically all over the world. Chemical tests for intoxication are compulsory in Sweden

and Germany after traffic accidents, as well as in many other European countries, and in something like one-third of the different American commonwealths.

Let it be quoted from the findings of that A.M.A. committee, that:

"The importance of alcohol as a factor in traffic accidents has been demonstrated by the work of R. L. Holcomb in Evanston, Ill. Alcohol tests made of the breath of 1,750 drivers chosen at random on the streets of Evanston, a legally dry community, were compared with the results of alcohol tests made on the urines of 270 drivers brought to Evanston hospitals after being involved in personal injury accidents. If alcohol were not a factor in accidents, it is obvious that the percentage of drivers in each of these two groups who had been drinking would be about the same. However, it was found that 47 per cent of those involved in personal injury accidents had alcohol in their blood, while only 12 per cent of the drivers selected at random were in the drinking class.

"Assuming that the chance of having an accident when no alcohol has been consumed is represented by the number one, then the chance of having an accident has been shown to be fifty-five times greater when the average person has a concentration of alcohol in his blood of 0.15 per cent or more. (Approximation by Committee on Tests for Intoxication, National Safety Council, in its 1938 Report.)

"Holcomb's survey confirms previous observations that alcoholic intoxication contributes materially to the peak of accidents, which occurs on Saturdays and Sundays as well as the belief of many that alcoholic intoxication, rather than darkness, is the major cause of the high proportion of personal injury accidents in the hours after midnight.

"The concentration of alcohol in the blood is one of the best criteria of intoxication because blood alcohol concentrations closely parallel detrimental effects noted in carefully conducted experimental tests. Although this relationship is not mathematically exact because of slight variations resulting from inherent differences in human beings, it is sufficiently accurate for practical purposes. The relationships between concentrations of alcohol in blood, urine, saliva and breath have been shown to be sufficiently definite so that chemical tests of any of these body materials can furnish a reliable measure of the degree of alcoholic influence.

"For medicolegal purposes, the committee of the A.M.A. cited recommends the following interpretation of chemical tests for alcohol:

1. Although there is no minimal figure which can be set at which there will be absolutely no effect from alcohol, the committee recommends that persons with a concentration of alcohol of less than 0.05 per cent by weight in blood or its equivalent in urine, saliva or breath should not be prosecuted for driving while under the influence of alcoholic liquor.

2. All persons show a definite loss of that clearness of intellect and control of themselves which they would ordinarily possess when the concentrations are above 0.15 per cent in the blood or its equivalent in other body fluids or breath and should therefore be considered as under the influence.

3. When the alcohol concentrations are between 0.05 and 0.15 per cent in the blood, a great many of the persons will be under the influence of alcohol, but the committee recommends prosecution only when the circumstances and results of physical examination give definite confirmation of such influence."

NATIONAL PHYSICIANS COMMITTEE SHOULD BE SUPPORTED

On PWA building construction work in Chicago, day laborers are paid at the rate of one dollar per hour for five eight-hour days per week. Before this laborer is allowed to work one hour he must join the International Hod Carriers Building and Common Laborers Union of America. The initiation fee is forty dollars; the dues two dollars monthly. The year's cost for the initiation and dues is sixty-four dollars.

On March 4 the Washington, D. C., Appellate Court ruled, in effect, "that the practice of medicine is a trade and not a profession." The case was remanded to the Federal District Court for trial on the charge "of criminal conspiracy to restrain trade." This constitutes merely another step in the program designed to break down the confidence of the public in organized medicine and to discredit the practicing physician.

It should be kept constantly in mind that on the basis of the actual record, American Medicine has provided a more effective and more widely distributed medical service than has ever

before been provided by any nation in the world's history.

On the representations of the agents of Justiee, the original indictments against the Seeretary of the AMA, the editor of *Journal of the American Medical Association* and seventeen other physicians were voted on December 20, 1938.

These indiefments formed the base of the most systematic and widespread propaganda that was ever known in this country in connection with any trade or profession. Newspapers, magazines, public platforms, radios, were and are being used to tell the public (in effect) that organized medicine is officered by criminals who are trying to maintain a strangle-hold on Ameriean medical service and distribution in direct contravention of law.

After the barrage of publicity was laid down, on February 28, 1939, Senator Wagner introduced into the Congress the bill that beeame known as the Wagner National Health Act.

This act did not set up any new Federal bureaus or agencies. It did, however, provide for appropriations totaling $89,000,000 for different kinds of health serviees for 1940, $120,000,000 for 1941, $230,000,000 for 1942, and for subsequent years such sums of money as were needed. Estimates of how much might be needed under the act vary anywhere from $850,000,000 a year to as much as three billion dollars a year.

The opinion is widely held that this suit was brought, not with the expectation of proving charges or winning a lawsuit, but largely if not entirely, for the purpose of providing a propaganda base that would pave the way for the enactment of drastic if not actually revolutionary health legislation. The menace was sensed, and the enactment of legislation was vigorously opposed by physicians throughout the United States. Hearings before the Sub-Committee of Edueation and Labor of the Senate evideneed sueh an aroused public opinion that it made wholly impractieable the passage of the Wagner National Health Bill in the last Congress.

However, there has been no final settlement of the issue. The adverse propaganda continues. Unless steps are taken to thoroughly acquaint the public with the methods, the progress, the achievements of Ameriean Medieine, there is little else for it to do but believe what it is told; namely, that our medical service is inadequate and ineffective. If the public finally reaehes this conclusion, revolutionary changes will result and the physician can expeet to have to become subservient to the Ward Committeeman and take instructions from the Precinct Captain.

A new kind of problem is presented. It is in all likelihood the most important one that physicians have had to face. To meet the urgent need and to help solve the problem, the National Physicians' Committee was established.

This should be kept in mind constantly, this Committee will be effective just to the extent that it is aecorded the moral and financial support of the rank and file of practicing physicians. If physicians refuse or fail or neglect to volunteer their support, the effort will be ineffective. Neglect is as dangerous as failure or refusal.

If you have not done your part, you should reread the opening paragraph of this story. Possibly you will prefer to join the Hod Carriers Union—at a cost of $64.00 per year. If you prefer to help maintain the practiee of medicine as a profession, send your check—as much as you can afford—today. Make it payable to Dr. N. S. Davis, III, Treasurer, and mail it to the National Physicians' Committee for the Extension of Medical Service, 700 N. Michigan Ave., Chicago, Illinois.

THE PRESIDENT'S ONE HUNDRED BED HOSPITALS

The Wagner National Hospital Act of 1940, whieh provides for the construction of some fifty-one hundred bed hospitals with federal funds should receive more serious consideration than the $10,000,000.00 involved might indieate.

The proposal involves the building of hospitals in areas laeking hospital facilities and financially unable to provide them. It places on such loeal communities full responsibility for maintenance and operation.

The hospitals contemplated by the President and by the Wagner Hospital Bill of 1940 are to cost $150,000.00 and approximately to contain $50,000.00 worth of equipment, or an average cost of $200,000.00.

All of the available data on the cost of hospital operation indieates that the annual operating cost approximates the investment in plant and equipment. There are wide variations. If all, or a large percentage of the beds are oeeupied by chronics, or if located in areas with equable or mild elimates, the eosts will be lower. However,

the actual costs on the basis of 80% occupancy range from a minimum of $3.00 to an average of $6.00. Hence, to operate a hundred bed hospital for one year requires approximately 30,000 patient days of actual occupancy and an annual cost of from $90,000 as a minimum to $180,000 average cost per year.

On the basis of the provisions of the bill it would be necessary to locate the hospital in an area that could not otherwise erect the building and yet, at the same time, be able to finance operation on a scale which would each year approximate the actual cost of construction. Obviously this is a paradox.

On the basis of the proposed legislation, the Federal Government retains title to the property and merely leases it to the local agency at a cost of $1.00 per year.

It would seem that there are but two conclusions. First, that no area can provide the two requirements and that no hospitals could be built. Second, that if one or more hospitals are built they woud require continuous subsidy or government operation.

If the first conclusion is the correct one, it would appear that if the bill were enacted with the appropriation omitted the same number of hospitals would be built.

If the second conclusion is correct, the building of such hospitals would provide a first step in a nation-wide government ownership and operation of general hospitals and the political control of the medical profession.

On the basis of these facts, the proposal is either childishly silly or really sinister. Draw your own conclusions.

DEATH COMES TO MRS. RALPH PEAIRS

Mrs. Myra Sinclair Peairs, 53, of 302 North School street, Normal, Illinois, wife of Doctor Ralph P. Peairs, councilor of the Fifth District, an early and active worker in the Woman's Auxiliary of the State Society died Tuesday, March 12, at the Mennonite hospital of heart disease. She had been il for three months.

As Miss Myra Sinclair she was born March 28, 1886, in Bismarck, N. D., a daughter of H. C. and Lutie Beggs Sinclair After being married to Dr. Peairs, June 24, 1913, in Normal, the couple moved to Milwaukee, Wis., where Dr. Peairs practiced. They were there for five years and then moved to Normal.

Three Children Survive

Surviving are the husband, two daughters, Myra A., San Luis Obispo, Calif.; Nancy, a student at Illinois Wesleyan university and a son, Richard, at home. There are also one sister, Mrs. B. L. Catron, Springfield, and one brother, U. J. Sinclair, Calipatria, Calif.

Mrs. Peairs was active in Girl Scout work, a member of Kappa Gamma sorority, Woman's University guild president for 10 years. She had been active in Normal public school PTA and was a former president. She was first president of the women's auxiliary to the McLean County Medical society, in 1927, the first society of that kind in the state.

Graduate of Wesleyan

She spent her childhood in Normal and later went with her family to San Diego, Calif., where she was graduated from high school. She went one year to Leland Stanford university in Palo Alto, Calif., and then returned to Normal, graduating in 1909 from Illinois Wesleyan university.

The following year she went to Columbia university teachers college in New York city, graduating there in 1910. In 1911 and 1912 she was on the faculty at Illinois Wesleyan.

She was a member of the First Presbyterian church of Normal.

THE FIRST CAESAREAN SECTION

The first successful Caesarean section on a living woman was not performed by a physician, but by the Swiss sow gelder, Jacob Nufer, in 1500, on his own wife. The first doctor to deliver a woman by section was an Italian surgeon, Christopher Bain (1540). On April 21, 1610, Jeremias Trautmann performed the first Caesarean operation to be historically established and described in detail on a living woman, at Wittenberg, in Germany. A live child was born, but the mother died suddenly three weeks later. This case led to a correspondence between the Cologne surgeon, Fabricius Hildanus, and his colleague, Michael Döring. French surgeons had performed this operation on several occasions during the 16th century as reported by Rousset in 1581 in a voluminous tome. Jacques Guillemeau (1550-1609), one of the most outstanding pupils of Ambroise Paré (1510-1590), performed a Caesarean operation on a living woman in the presence of the latter, but the patient died. Paré had advised against the operation, and he gave a description of the operation on the cadaver.—*Ciba Symposia.*

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois
Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

MEDICAL ECONOMICS COLUMN FOR APRIL

The recent decision of the United States Court of Appeals for the District of Columbia, in case No. 7188, The United States of America vs. American Medical Association, a Corporation, is the headline news of the month. On March 4, 1940, the decision reversing the decision last summer in favor of the American Medical Association brought back the question of whether the practice of medicine is a trade or a profession. This was quite a surprise to the rank and file of the medical profession who both hoped and thought that the decision last summer definitely decided that the practice of medicine was a profession and accordingly not subject to the Sherman Anti-trust law, which was thought to have to do with trade. Possibly some of "those in the know" were not surprised, and were prepared for the necessary sequelae. This last decision will undoubtedly result in a further appeal by the Medical Association to the Supreme Court of the United States. How long this will take is problematical, but until that decision is made, the American Medical Association is under suspicion, not to mention any ulterior motives behind the entire affair.

The press both lay and medical has commented on the decision at length. Most of the comment has been favorable to the medical profession.

In the March 9th issue of the *Liberty Magazine* was another article unfriendly to the medical profession, entitled Doctors on the Operating Table, written by Frederick L. Collins. It is a fine example of the clever manner in which truths, half-truths and untruths are presented so that an apparently friendly article can contain portions which are distinctly unfriendly and unkind to the medical profession, to whom the writer is apparently most friendly disposed. Please take time to read this article and make your own appraisal of the type of propaganda now being used against the medical profession of America.

The Public Relations Bureau of the Medical Society of the State of New York has recently published a most excellent brochure entitled "What It Means to Be a Doctor." These can be purchased directly from the office at 2 East 103rd Street in New York, in any quantity desired. It would be well to have this brochure in the hands of every member of the Illinois State Medical Society and better still to have copies of the same available in their offices, so that they can be distributed to the laity. It would be a fine plan for County Medical Societies to purchase the first supply for their members and distribute them at the regular meeting. This is the kind of propaganda that the medical profession should encourage. It is dignified, informative, and educational.

Plans for the one hundredth anniversary issue of the Illinois Medical Journal continue and the indications are that it will be outstanding. When and if the Editor or one of the officers of the Society request assistance from the officers of any of the Component County Societies, be sure and furnish the desired information promptly. With the assistance of county secretaries, the group of photographs of the pioneer physicians of Illinois should be of the greatest interest, particularly when added to the collection of Dr. Black of Jacksonville. Every community has some pioneer physician, whose photograph should be included in the exhibition. It is the obligation of the County Secretary to see that this work is done.

The National Hospital Act of 1940 continues to be discussed pro and con. The President of the Chicago Medical Society has analyzed this law and has provided an article to be published in this column on the same. Dr. Davis has been interested in this subject for some time and his analysis should be of interest to all of us, for it is quite generally agreed that the bill has a fine chance of passing, even though it has been accused as "It's only the Beginning." Without opposition from the medical profession, either individual or an association, there is nothing to

keep it from being passed. It will help to assuage the grief of the proponents of the Wagner Bill and in a small measure show progress in the furnishing of Medical care to the submerged third, of which we hear so much and see so little.

The residents of Douglas County in Wisconsin have not waxed enthusiastic over a plan for voluntary health insurance offered in 1938, at approximately $35.00 per family per year. Only 400 of the 30,000 residents of the county took advantage of opportunity the first six months and only an additional 75 the second six months. The doctors received 83½ per cent of their fees and the administrative deficit of $557 was made up by the Medical Society of Wisconsin. After the demand for some such a plan, the reason for the apparent lack of interest on the part of the public is difficult to explain, but the fact remains that the number of participants was much below all estimates. It will be most interesting to see whether this experience will be repeated at other points in the nation.

We must not forget to contact the candidates nominated at the coming election in April. We must know their stand in regard to the Socialization of Medicine. This can be obtained if the right men contact the candidates and it is never too early to start to get them on record. That will give all of us something to do for organized medicine.

E. S. Hamilton, M.D., Chairman.

Correspondence

HEALTH SERIOUSLY AFFECTED BY LARD SUBSTITUTION

Chicago, March 10, 1940.

To the Editors

The *Chicago Daily Tribune* of the 26th inst. publishes parts of an address made by Representative Clarence J. Brown, of Washington, D. C., relative to the army's use of substitutes replacing lard, amounting to 10,000,000 pounds, although, quoting Mr. Brown, "Today hog prices are the lowest in many years, with the farmer receiving 5 cents per pound and less, on the farm, for his hogs. He is being told that there is an oversupply of pork products. Yet the government which is being supported by the farmer's hard earned tax dollars, is purchasing and using lard substitutes in great quantities.

While the quotation is meant to call attention to the economic reason for not using synthetic and other substitutes even in a time like this, there is, for physicians a more serious reason for insisting on animal fats liberally for all, army and citizen alike, because of the effect on nutrition, efficiency in labor, prevention of disease and even mortality.

On May 28, 1938, there was printed in the *British Medical Journal,* an article by Dr. Med Johanne Christiansen of Copenhagen, a prominent physician and research worker, an article entitled "Nutrition of Denmark during the war," which I have just received. I enclose the reprint for copying or extracting authentic information on this subject, in a country about the size of Illinois, which represents the physicians' relation to the subject.

Effie L. Lobdell, M.D.

We quote from the *British Medical Journal* as follows:

NUTRITION OF DENMARK DURING THE WAR

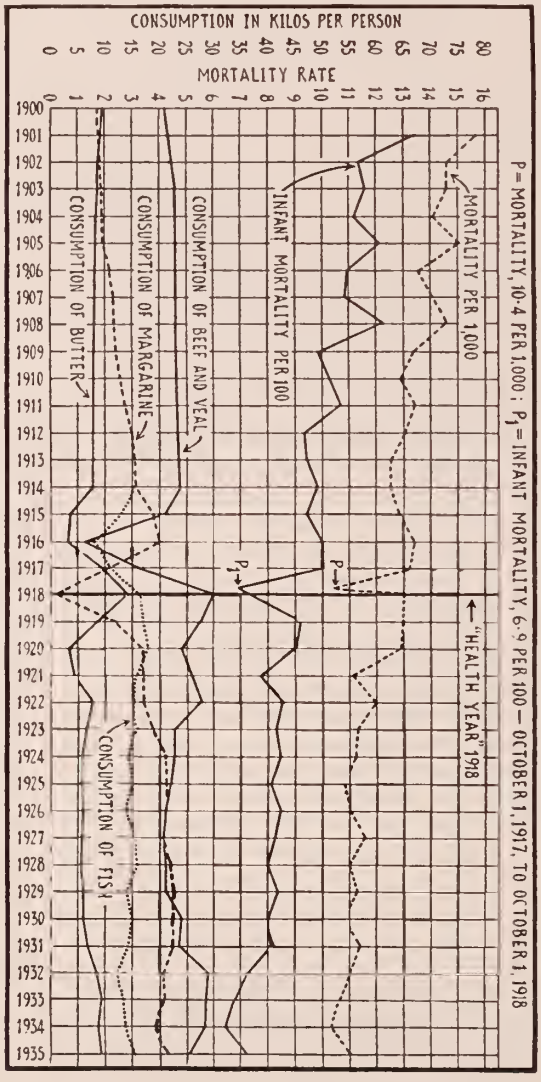
To the Editor of the British Medical Journal

Sir—May I correct any misunderstandings which may have arisen from Dr. Alfred C. Jordan's reference to the rationing of foodstuffs in Denmark in 1918 (*Journal,* April 30, p. 973). Rationing became necessary in this year because margarine—which provides too great a proportion (15 to 20 per cent) of the calories in the Danish dietary—could not be imported; consequently the consumption of this substitute foodstuff was reduced almost to zero in the autumn of 1917. It became necessary to restrict the export of butter, and a weekly ration of 250 grammes was allowed for each person. All small children were allowed 1 litre of whole milk (against Dr. Hindhede's views) and the consumption of meat and fish increased considerably (this also was against Dr. Hindhede's views). Free trade was possible in meat and fish, but potatoes were scarce, bread restricted, and the imports of fruit diminished. To make up the loss of calories previously provided by margarine it was necessary to eat more milk and meat. The only part of the usual conception of this rationing which is true is that the bread was whole-rye and whole-wheat, because the import of foreign meal was stopped. Dr. Hindhede certainly gave advice regarding the bread, but his "dictatorial powers" were simply part of a myth which ought to be exploded. The rationing was forced on us by the circumstances then existing, and the director responsible for it was Professor H. Mollgaard, who was supported by Dr. Hindhede and several other people.

The directors of this scheme were surprised to find that the results of this rationing showed the importance of animal nutrition, thus supporting the modern views of McCollum, Mellanby, and Orr. The supposed "Spartan diet" of 1918 has for too long been quoted in sup

port of the vegetarian faddism of Hindhede. It is an established fact that the Danish people never lived better than in 1918, when they had genuine home-made —mostly animal—food without any imported substitute foodstuffs. It was especially the poor people who benefited because of the equal distribution of butter and milk (instead of margarine and skim milk). It is especially dangerous for the nutrition of poor people if this great and important experiments with the dietary of three million people is misquoted and wrongly explained, as it has been for twenty years.

For full comprehension of the accompanying chart, which has never before appeared in an English journal,



Nutrition and Mortality in Denmark, 1901 to 1935.

it is necessary to remember that the decreased mortality is counted from October 1, 1937, to October 1, 1938, the full mortality of the whole year 1918 rising to 13 per thousand because of the influence epidemic which began in Denmark in October, 1918.—I am, etc.,

JOHANNE CHRISTIANSEN.

Copenhagen.

Nutrition and Mortality in Denmark, 1901 to 1935.

VETERANS' SERVICE COMMITTEE DINNER

F. O. FREDRICKSON, PRESIDING
6:00 P. M. Sharp Tuesday, May 21, 1940

PROGRAM

Call to Order

1. Presentation of Colors—Commander Peoria Post No. 2.
2. Bugle: to the Colors—Carl Steinhoff, M. D.
3. "Newer Aspects of Medical Service in War"—John Dibble, Lt. Col. M. C. U. S. A. 6 Corps Area.
4. "Americanism"—Major Leigh N. Bittinger, Depart. Commander, Dept. Illinois, American Legion, Commander Onagro Military Academy.
5. "Remarks"—Karl A. Gillig, Depart. Commander Veterans of Foreign Wars.
6. Moment of Silence.
7. Retirement of Colors.

FEDERALIZED MEDICINE IS DOOMED IN UNITED STATES

Minneapolis, Minn., March 4, 1940.

To the Editor:

As a member of the Central Committee of the National Physician's Committee for the Extension of Medical Service, you will undoubtedly be interested in the results of Modern Medicine's 1940 Physicians' Referendum. Advance page proofs are enclosed herewith.

The balloting of 20,215 U. S. physicians demonstrates conclusively that federalized medicine is doomed in the U. S. because 85% of the doctors would not co-operate with a federally controlled and administrated legislative program tending toward the drastic curtailment of the private practice of medicine. Furthermore, 88% see in such a program a menace to the public health through a deterioration in the quality of medical service available to most people in the United States; 85% are united in the support of the platform of the American Medical Association; and 88% approve of its key point, namely, local responsibility for the delivery of medical care.

It is our desire to serve the purposes of the National Physician's Committee for the Extension of Medical Service by also assuming responsibility for countering propaganda destructive to the ideals, ethics and independence of American medicine. At our own expense we are giving widespread publicity to the results of this referendum through all channels of publicity, press, radio, etc.

We believe that you may further serve the

fundamental purposes of the National Physician's Committee by doing these things:

1. Write us a letter expressing your opinion concerning the meaning of the results expressed in this physicians' referendum.

2. Give to your local newspaper an official statement, as a member of the Central Committee of the National Physician's Committee, concerning the meaning of the doctors' attitude toward federalized medicine, as expressed in this referendum.

Sincerely yours,
Modern Medicine,
A. E. Hedback, M. D., Editor.

STATE MATERNAL WELFARE LUNCHEON

The annual State Maternal Welfare Luncheon will be held at High Noon, Wednesday, May 22nd, at the Pere Marquette Hotel in Peoria. There will be a very interesting program featured by a symposium on The New Obstetrical Hospital Plan for Illinois by members of the State Maternal Welfare Committee. Also, we will have as our guest Doctor Litzenburg, a nationally known obstetrician, who will address us on The Hospital Plan of Wisconsin.

We are very anxious to have a full attendance of all the county chairmen of the State Any other physicians attending the State Meeting who wish to attend this luncheon and program may secure tickets at the door of the dining room.

T. B. Williamson M. D,,
Chairman.
John F. Carey, M. D.,
Secretary.

OPENING FOR PHYSICIANS

At the present time, there are several vacancies on the medical staffs of the State hospitals for the insane and feeble-minded under the jurisdiction of the State Department of Public Welfare.

Physicians enter the service in the classification of junior physician. Legal residence in the State of Illinois, citizenship in the United States, graduation from a Class A medical college, as defined by the American Medical Association, and license to practice medicine in this State are required.

The salary for this position is $150 per month with full maintenance for self and family. At the end of each year of service, an automatic increase of $5.00 per month is allowed, until the maximum of $180 per month is attained. The quarters for physicians and their families have been improved considerably by the construction of new staff houses at many of the hospitals.

If no civil service examination is pending, the applicant may be appointed and will be required to take the next examination for the position of junior physician which is scheduled by the State Civil Service Commission, thus affording merit protection.

Advancement to the higher classification of senior physician, clinical director and assistant managing officer is provided through promotional examination. The salary range for senior physician is from $195 to $210 per month. For clinical director, the salary range is from $250 to $300 per month. Assistant managing officers in institutions with a population of less than 2,500 receive from $218.33 to $243.33 per month, and in institutions with more than 2,500 patients, receive from $243.33 to $268.33 per month. Maintenance for self and family is provided in all of these positions.

Opportunities for graduate training in psychiatry while employed in the State service have been provided and will be augmented when the additional wards and research facilities in the new Psychiatric Institute are made available in the near future.

Some residences in psychiatry are also available in the State hospitals for the insane. The salary is $52.50 per month with maintenance for self only.

Applicants should communicate with Mr. A. L. Bowen, Director, State Department of Public Welfare, Springfield, Illinois, for further information.

WOMAN'S AUXILIARY

County News

We are happy to welcome two newly formed auxiliaries. The new branches and their officers are:

Henry County

President.....Mrs. D. E. Meier, Kewanee, Ill.
Vice-President.....Mrs. C. P. White, Kewanee, Ill.
Secretary.....Mrs. M. G. Montgomery, Kewanee, Ill.
Treasurer.....Mrs. W. R. Young, Genesco, Ill.
Historian.....Mrs. F. J. Stewart, Kewanee, Ill.

Peoria County ....

President.....Mrs. O. E. Barbour, Peoria, Ill.
Vice-President.....Mrs. H. F. Diller, Peoria, Ill.
Secretary.....Mrs. Fred Stahmann, Peoria, Ill.
Corresponding Secretary..Mrs. E. Seabury, Peoria, Ill.
Treasurer.....Mrs. L. A. Burhans, Peoria, Ill.
Historian.....Mrs. Perry Goodwin, Peoria, Ill.

Madison County

Because of illness Mrs. C. W. Emons, president of the newly formed Auxiliary, has had to resign. Mrs. E. W. Wilson, Highland, Ill., is now the president and Mrs. G. E. Halyama is first vice president.

Vermilion County

A dinner preceded the installation of newly elected officers at the Grier-Lincoln Hotel, Danville, Ill., Tuesday March 5, with 24 members present. The new officers are: President Mrs. Harlan English; first vice-president, Mrs. J. C. Moore, Hoopston; second

vice-president, Mrs. D. C. Good; third vice-president, Mrs. H. F. Hooker; recording secretary, Mrs. V. L. Murphy, Georgetown; treasurer, Mrs. Bert Moore; corresponding secretary, Mrs. H. F. Dice, Ridgefarm.

Cook County

The Woman's Auxiliary to the Chicago Medical Society held their annual membership luncheon Wednesday, March 6. Mrs. Chas. Segal, president, welcomed the prospective members who were guests of the auxiliary. Twenty-two new members were reported making a total of 35 to date. Three branches reported 100 per cent. paid up memberships; namely Calumet, North Side and South Chicago. Mrs. Jesse Gerstly, a member of our Jackson Park Branch, gave a most interesting and humorous talk on "Recent Escape Literature."

Cook-Englewood Branch

Englewood held its regular monthly meeting March 8 at the nurses' home, 60th and Green streets. A dessert luncheon preceded the business meeting called by the president, Mrs. J. McGuiggan. Dr. A. M. Simons spoke on Medical Economics and the National Health program. Mrs. Arthur Edison, legislative chairman, discussed the subject from the viewpoint of the Woman's Auxiliary.

Sangamon County

Many guests were present at the annual Laity Day program presented by the Woman's Auxiliary of Sangamon County, February 12. Mrs. D. M. Sirca, president, opened the meeting with a welcome to members and guests. Mrs. W. J. Morginson, program chairman, and Mrs. D. H. Trumpe, co-chairman, presented the following program: Mr. B. K. Richardson, chief of the state division of public health instruction, commented on motion pictures related to tuberculosis, diet and heredity. Miss D. Southwick, public school nurse, outlined activities and progress of school health service.

Mrs. C. W. Stuart,
Publicity Chairman.

IT WON'T BE LONG NOW before the Woman's Auxiliary to the American Medical Association will be convening at the Hotel Pennsylvania, New York City, for their 18th Annual Convention to be held June 10 to 14, 1940. IS YOUR RESERVATION IN? We are sure you will want to stay at the headquarters Hotel Pennsylvania. In order to get a reservation, mail your request today to Dr. Peter Irving, Housing Bureau, Room 1036, 233 Broadway, New York City.

CONVENTION PUBLICITY BULLETIN No. 3.
Almuth E. Otten,
Mrs. Harry Otten,
Councilor, District 5.

THE THIRTEENTH ANNUAL CONVENTION OF THE WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Peoria, Illinois
May 21-22, 1940

Mrs. Charles Crain Winning, Presiding

TUESDAY, MAY 21, 1940

11:00 A. M.—"School of Instruction on Auxiliary Activities," Jefferson Hotel. Mrs. Geo. Walbright, presiding; Mrs. Harry Otten, co-chairman.

2:00 P. M.—Opening Business Session, Ballroom, Jefferson Hotel. Credential and Registartiin Report—Mrs. M. A. Nix.
Convention Announcements — Mrs. Milo Easton.
Roll Call.
Minutes.
Treasurer's Report.
Auditor's Report.
Annual Report of Officers.
Annual Report of Councilors.
Adjournment until 9:30 A. M., May 22nd.

WEDNESDAY, MAY 22, 1940

9:30 A. M.—Ballroom, Jefferson Hotel.
Memorial Services conducted by Mrs. O. E. Barbour.
Roll Call.
Minutes of Tuesday, May, 21, 1940.
Credential and Registration Report—Mrs. M. A. Nix.
Convention Announcements — Mrs. Milo Easton.
Annual Report of Chairman of Standing Committees.
Annual Report of County Presidents.
Reports of Special Committees.
Report of Resolution Committee—Mrs. Jos. M. Knochel.
Final Report of Credential & Reg. Com. —Mrs. M. A. Nix.
Report of Nominating Committee—Mrs. Henry Hurd, Chairman.
Election of Officers.
Installation of Officers.
Response—Mrs. H. J. Dooley.
Presentation of President's Pin—Mrs. Lucius Cole.
Adjournment.

3:00 P. M.—Post Convention Board Meeting, Jefferson Hotel.
Mrs. H. J. Dooley, presiding.

WOMAN'S AUXILIARY

Important Notice

The Woman's Auxiliary is sponsoring an exhibit of the equipment used by the early Illinois physician as a part of the Hall of Health in Peoria during the Annual Meeting.

Mrs. E. W. Burroughs, Ridgway, Illinois is Chairman and requests that any one having material suitable for this special feature, communicate with her at once.

Special cases will be used in which to display these instruments, saddle bags, etc.

ATTENTION AUXILIARY MEMBERS

The doctors are building an exhibit on "The Pioneer Doctors of Illinois" to be shown at Peoria during the Illinois State Medical Convention in May. They have invited the Woman's Auxiliary to collect "Early Equipment" used by the doctors of Illinois which shall be placed on display with their exhibit.

If you have or can obtain any of these materials please communicate with Mrs. E. W. Burroughs, Ridgway, Ill., or send them to her by registered mail. Items may also be taken to the exhibit or sent by some member from your district.

Your property will be well protected as the cases which are to enclose them will be locked during the showing. We will deeply appreciate your interest in this display and your help in making the exhibit a success.

Mrs. E. W. Burroughs,
Chairman of Exhibits.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY—EXAMINATIONS

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Atlantic City, N. J., from Friday, June 7, through Monday, June 10, 1940, prior to the opening of the annual meeting of the American Medical Association in New York City on Wednesday, June 12, 1940. Formal notice of the exact time and place of the examination will be forwarded to each candidate several weeks in advance of the examination dates. Group A candidates will be examined on June 7 and 8, and Group B candidates on June 9 and 10.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office *before April 15.*

The annual dinner of the Board will be held in New York City on Wednesday evening, June 12, 1940, at the Hotel McAlpin. Diplomates certified at the preceding days' examination will be introduced personally, and there will be several speakers. All Diplomates of the Board, and others interested in the work of the Board, are cordially invited to attend this dinner.

Tickets at $3.50 each may be obtained from Dr. Joseph L. Baer, chairman, 104 S. Michigan Avenue, Chicago, Illinois, or at the registration desk during the examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

ARMY EXPERIENCE FOR PHYSICIANS

An interesting medical corollary to the augmentation of the United States Army during 1940 and 1941 and to the planned large scale Army maneuvers during the spring and summer of 1940 is the broad medico-military experience which a great number of civilian physicians will receive. Medical Reserve officers are being used to augment the entire Army Medical Service, which includes everything from small unit installations to large Station Hospitals, General Hospitals, and hospitals designed primarily for the treatment of specific types of cases.

Physicians under 35 years of age who are desirous of obtaining extended active duty with the Army but who do not hold Reserve commissions are being offered appointments in the Medical Corps Reserve in the grade of 1st Lieutenant, in order to permit them to be placed on such duty. Captains and Lieutenants are at present being offered excellent assignments throughout the continental United States, and it is hoped that authority will be granted to actually permit some officers to go to Hawaii and Panama. In addition to having a new and very busy experience in the practice of medicine, the average officer finds the pay and allowance attractive. The pay and allowances for a married 1st Lieutenant amount to approximately $263.00 a month; for a single 1st Lieutenant to approximately $225.00 a month; for a married Captain to approximately $316.00 a month; and for a single Captain to approximately $278.00 a month. In most cases the above pay and allowances would apply inasmuch as Government quarters are not usually available for officers on extended active duty. In the few instances where Government quarters are available, the amounts would be $40, $60, $70, and $80 less per month respectively. In addition, the officer is reimbursed for mileage traveled from his home to his station, and upon completion of his tour of duty is reimbursed similarly for the travel to his home.

Application for one year of active duty, or for appointment in the Medical Corps Reserve with a view to obtaining one year of active duty with the Army, should be requested at once by a letter addressed to the Commanding General of the Corps Area* wherein the physician permanently resides. In addition, the application should contain concise information regarding permanent address, temporary address, number of dependents, earliest date available for active duty, and that internship has been (or will be) completed; and it should be accompanied by a report of physical examination recorded on the Army Form W.D. A.G.O. 63, which may be obtained from any Army station. From the group of Reserve officers placed on extended active duty since August, 1939, over 25 per cent. of those within the age requirements of 32 years of age

or less for commission in the Regular Army Medical Corps found military service sufficiently to their liking to cause them to take entrance examinations for the Regular Army.

*First Corps Area (Maine, N. H., Vt., Mass., R. I., Conn.) Army Base, Boston, 9, Mass.

Second Corps Area (New York, New Jersey, Delaware) Governors Island, New York.

Third Corps Area (Pa., Md., Va., D. C.) Post Office & Court House, Baltimore, Md.

Fourth Corps Area (N. C., S. C., Ga., Fla., Ala., Tenn., Miss., La.) Post Office Bldg., Atlanta, Ga.

Fifth Corps Area (Ohio, W. Va., Ind., Ky.) Fort Hayes, Columbus, Ohio.

Sixth Corps Area (Ill., Mich., Wis.) Post Office Bldg., Chicago, Ill.

Seventh Corps Area (Mo., Kan., Ark., Iowa, Neb., Minn., N. D., S. D.) New Federal Bldg, Omaha, Neb.

Eighth Corps Area (Tex., Okla., Colo., N. M., Ariz.) Fort Sam Houston, San Antonio, Tex.

Ninth Corps Area (Wash., Ore., Idaho, Mont., Wyo., Utah, Nev., Cal.) Presidio of San Francisco, San Francisco, Cal.

DEPARTMENT OF PUBLIC HEALTH

March 15, 1940

Illinois Medical Society,
30 North Michigan,
Chicago, Illinois.
Dear Sir:

Below is a list of laboratories just approved for pneumonia typing.

On the attached sheet is a list of laboratories newly approved for pre-marital tests. These are for publication in your journal.

Approved for Pneumonia Typing

Oak Forest Infirmary Laboratory, 159th and Cicero Avenue, Oak Forest.

St. George's Hospital Laboratory, 449 Winneconna Parkway, Chicago.

St. Margaret's Hospital Laboratory, 600 First Street, Spring Valley.

University Hospital Laboratory, 432 S. Wolcott Street, Chicago.

Yours very truly,
H. E. McDaniels, Ph.D.,
Co-ordinating Bacteriologist.

HEMcD:rmb
Attach.

LABORATORIES APPROVED FOR PRE-MARITAL TESTS

March 15, 1940

Columbus Laboratories, 31 N. State Street, Chicago.

Culver & Baker Laboratory, 7 W. Madison, Chicago (Gc only).

DeKalb Public Hospital, 719 S. First Street, DeKalb (Gc only).

Henrotin Hospital Laboratory, 939 N. LaSalle Street, Chicago.

The Illyes Laboratory, Gee Building, Lawrenceville (Gc only).

Alexander J. Link, X-ray Laboratory, 7 S. County Street, Waukegan.

McLeansboro Hospital Laboratory, McLeansboro (Gc only).

Morris Hospital, 150 W. High Street, Morris. (Gc only).

The Olney Sanitarium, Inc., 606-610 E. Main Street, Olney.

Post Graduate Hospital Laboratory, 2400 S. Dearborn Street, Chicago (Gc only).

St. Francis Hospital, 530-616 N. Glen Oak Avenue, Peoria.

Laboratory Suite 930, 104 S. Michigan Avenue, Chicago.

U. S. Naval Hospital Laboratory, U. S. Naval Training Station, Great Lakes.

University Hospital Laboratory, 432 S. Wolcott Street, Chicago (Gc only).

SECRET DISSECTIONS DURING THE MIDDLE AGES

Since the dissection of human cadavers was prohibited at times during the Middle Ages, it was necessary for students to steal corpses in order to study anatomy. The great anatomist, Vesalius, for example, obtained material for his anatomical studies by taking the corpses from the gallows of Louvain.

Felix Platter (1536-1614), professor of medicine, and municipal and hospital physician at Bâle, relates in his memoirs how he and his fellow students, armed to the teeth, dug up corpses at night in the cemetery at St. Denis. Wrapping themselves in their night clothes, they crept through a hole in the closed city gate. The cadavers were brought to the rooms of one of the students and dissected there. Because of the dreadful odor they poured vinegar on themselves. When they again approached the cemetery at night the watchman shot at them with cross-bows.—*Ciba Symposia.*

A seven year survey of the incidence of tuberculosis in New York City conducted by the City Health Department indicates that about 2.5% of the population is afflicted with the disease and that about 85% of those so afflicted are unaware of the fact. The highest percentage of tuberculosis—5.3%—is to be found among the city's homeless men and the lowest among the college students—0.2%.—New York City Department of Health, 1940.

The routine use of the tuberculin test in prenatal care can be easily used in clinics and private practice for discovery of active tuberculosis. Unsuspected active tuberculosis occurred in 1.7% of those tested in one county in California, where the early institution of collapse therapy prevented extension of the pulmonary disease.—Ianne, Charles, *Amer. Rev. of Tuber.,* Dec., 1939.

Program

of the

One-Hundreth Annual Meeting

ILLINOIS STATE MEDICAL SOCIETY

Peoria, Illinois, May 21, 22, and 23, 1940

1940 Official Program

COUNCILOR DISTRICTS

1st District—E. H. Weld, Rockford, Councilor.

Boone, Carroll, DeKalb, Jo Daviess, Kane, Lake, McHenry, Ogle, Stephenson, Winnebago.

2nd District—Edgar C. Cook, Mendota, Councilor.

Bureau, LaSalle, Lee, Livingston, Marshall, Putnam, Whiteside, Woodford.

3rd District—John S. Nagel, Percy E. Hopkins and L. E. Day, Councilors.

Cook County only.

4th District—E. P. Coleman, Canton, Councilor.

Fulton, Hancock, Henderson, Henry, Knox, McDonough, Mercer, Peoria, Rock Island, Schuyler, Stark, Warren.

5th District—Ralph P. Peairs, Normal, Councilor.

DeWitt, Logan, McLean, Mason, Menard, Montgomery, Sangamon, Tazewell.

6th District—Thomas B. Knox, Quincy, Councilor.

Adams, Brown, Calhoun, Cass, Greene, Jersey, Macoupin, Madison, Morgan, Pike, Scott.

7th District—I. H. Neece Decatur, Councilor.

Bond, Clay, Clinton, Christian, Effingham, Fayette, Macon, Marion, Moultrie, Piatt, Shelby.

8th District—C. E. Wilkinson, Danville Councilor.

Champaign, Clark, Coles, Crawford, Cumberland, Douglas, Edgar, Jasper, Lawrence, Richland, Vermilion.

9th District—Andy Hall, Mt. Vernon, Councilor.

Edwards, Franklin, Gallatin, Hamilton, Hardin, Jefferson, Johnson, Massac, Pope, Saline, Wabash, Wayne, White, Williamson.

10th District—J. S. Templeton, Pinckneyville, Councilor.

Alexander, Jackson, Monroe, Perry, Pulaski, Randolph, St. Clair, Union, Washington.

11th District—E. S. Hamilton, Kankakee, Councilor.

DuPage, Ford, Grundy, Iroquois, Kankakee, Kendall, Will.

THE ONE HUNDREDTH ANNIVERSARY MEETING

The Centennial meeting of the Illinois State Medical Society will be held in Peoria on May 21, 22, 23, 1940. The preliminary program appears in this issue of the ILLINOIS MEDICAL JOURNAL, and the official program will appear in the May issue, and will carry all necessary announcements.

The present membership of the Illinois State Medical Society is approximately 8,000, which is the maximum membership to date. Each member of the Society should be interested in the 1940 Centennial Meeting, and do everything possible to make it the outstanding of all meetings during the one-hundred years of medical progress.

A "Century of Progress in Medicine" will be featured throughout the annual meeting, and a number of special features have been scheduled which are materially different from those of previous years. Contrary to the usual arrangement in developing the scientific program, there will be a number of invited guests, most of whom will appear at the joint sessions of all sections.

Although each of the seven scientific sections and several special groups will hold their individual meetings, two morning and one evening session will be devoted to general sessions which will be attended by members from each section. The annual stag entertainment has been aban-

doned, and, in its place, on Tuesday evening there will be a general meeting of all sections with a program which will be of interest to all physicians. Similar arrangements have been made for Wednesday and Thursday mornings so that the individual section meetings will be held on Tuesday and Wednesday afternoons only.

Registration and Information headquarters will be in the new Shrine Mosque and in this same building, most of the section meetings will be held, and the technical and scientific exhibits likewise displayed. It will be necessary to have some special meetings in the Pere Marquette Hotel, and most likely some scientific exhibits will be presented in this hotel.

The Hall of Health will be open from Tuesday noon, May 21, to Saturday night, May 25, and will be housed in the large Peoria Armory. Here dozens of fine health exhibits will be on display for the public at large, and there will be no admission charge. The Committees in charge of the Hall of Health have procured the aid of a number of cooperating organizations interested in the various phases of health, and many outstanding exhibits have been procured for the benefit of the public.

The Secretaries' Conference will be held as a dinner meeting on Tuesday evening and at the same time, the annual Veteran's Dinner meeting will be held. Several section banquets will be scheduled for Tuesday evening, and complete information concerning these functions will be announced in the May ILLINOIS MEDICAL JOURNAL. Several Alumni Luncheons will be scheduled for Wednesday noon, and complete information concerning them, will appear in the official program.

The President's Dinner, as usual, will be held on Wednesday evening in the Ball Room of the Pere Marquette Hotel.

The Woman's Auxiliary to the Illinois State Medical Society has arranged their usual program, and in addition to these functions, a complete schedule of entertainment for all visiting ladies has been arranged by the Peoria Committees.

Complete information concerning the meeting will appear in the official program which will be published in the May ILLINOIS MEDICAL JOURNAL, and it is hoped that the Centennial meeting will be attended by the largest number of physicians which have ever attended an annual meeting.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 21, 1940

3:00—First meeting of the House of Delegates called to order by the President, James H. Hutton, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

THURSDAY MORNING, MAY 23, 1940

9:00—Second meeting of the House of Delegates called to order by the President for the election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

GENERAL SESSIONS

OPENING MEETING

TUESDAY AFTERNOON, MAY 21, 1940

1:00—Meeting officially opened by President, James H. Hutton, Chicago.

Invocation by

Address of Welcome by Mayor of Peoria.

Address of Welcome by President of Peoria County Medical Society, O. E. Barbour, Peoria.

Report of Chairman, Committee on Arrangements, Arthur Sprenger, Peoria.

WEDNESDAY MORNING, MAY 22, 1940

10:00—Oration in Medicine—"The Role of the Kidney in Cardiorenal-Vascular Disease." Leonard G. Rowntree, Philadelphia, Penn.

10:40—Oration in Surgery—"Thyroid Disease: Its Diagnosis and Management." Frank Lahey, Boston, Mass.

WEDNESDAY AFTERNOON, MAY 22, 1940

1:30—President's Address—James H. Hutton, Chicago, President Illinois State Medical Society.

THURSDAY MORNING, MAY 23, 1940

Induction of the President-elect.

Immediately before the closing of the meeting of the House of Delegates, the President-elect, J. S. Templeton, Pinckneyville, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, James H. Hutton of Chicago.

All members and guests at the meeting may be present at this interesting function.

JOINT SESSIONS

TUESDAY EVENING, MAY 21, 1940

Shrine Temple

Meeting of all Sections

8:00—"The Operative Treatment of Carcinoma of the Esophagus." Dallas B. Phemister, Professor and Chairman of the Department of Surgery, University of Chicago, Chicago.

8:30—"Recent Advances in Gynecologic Endocrinology." J. P. Greenhill, Professor of Obstetrics and Gynecology, Loyola University School of Medicine. Professor of Gynecology, Cook County Graduate School of Medicine, Chicago.

9:00—"The Nature of Obesity." L. H. Newburgh, Professor of Clinical Investigation, Department of Medicine, University of Michigan Medical School, Ann Arbor, Michigan.

9:30—"Choice and Dosage of Chemotherapeutic Agents for Bacterial Infections." Henry L. Barnett, Research Fellow in Pediatrics, Washington University School of Medicine, St. Louis, Missouri.

WEDNESDAY MORNING, MAY 22, 1940

9:00—"Selection of Cases for Splenectomy." Russell L. Haden, Chief of the Medical Service, Cleveland Clinic, Cleveland, Ohio.

9:30—"Diagnosis and Treatment of Common Deficiency Diseases in the Adult." Thomas D. Spies, Associate Professor of Medicine, University of Cincinnati, College of Medicine, Cincinnati, Ohio.

10:00—Oration in Medicine—"The Role of the Kidney in Cardiorenal-Vascular Disease." Leonard G. Rowntree, Philadelphia, Penn.

10:40—Oration in Surgery—"Thyroid Disease: Its Diagnosis and Management." Frank Lahey, Boston, Mass.

THURSDAY MORNING, MAY 23, 1940

9:00—"Cholecystography: With Special Reference to the Diagnostic Value of the Emptying Time." Adolph Hartung, Professor of Roentgenology, University of Illinois College of Medicine, Chicago.

9:30—"Pneumnia: Its Diagnosis and Treatment." W. B. Sutliff, Assistant Director Pneumonia Control Division, Department of Health, New York City, N. Y.

10:00—"Indications and Results of Subtotal Resection of the Pancreas for Hypogloycemin." Vernon C. David, Chairman of the Surgical Department, Rush Medical College and Presbyterian Hospital, Chicago.

10:30—"Visual Field Changes." C. W. Rucker, Assistant Professor of Ophthalmology, University of Minnesota Graduate School of Medicine, Associate in Opthalmology Mayo Clinic, Rochester, Minn.

SECTION PROGRAMS

SECTION ON MEDICINE

Edgar M. Stevenson.....Chairman
Willard O. Thompson.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

"Collapse Theory in Pulmonary Tuberculosis." Jerome R. Head, Chicago.

"Diagnosis and Management of Early Tuberculosis." Robinson Bosworth, East St. Louis.

"Pregnancy and Tuberculosis." Fred M. F. Meixner, Peoria.

"The Insulins in the Management of Diabetes." Thomas D. Masters, Springfield.

"Applications of Vitamin B_1 to Neuropsychiatry." F. G. Norbury, Jacksonville.

"Endocrine Studies of Patients After Subtotal Hypophysectomy." Paul Starr, Chicago, and Loyal Davis, Chicago.

"The Treatment of Acute Glomerulonephritis." Harold C. Lueth, Robert W. Keeton, and Mr. Harold Hailman, Chicago.

"Laboratory Aids in the Diagnosis of Coma." Mr. L. Gerber, Peoria.

Discussion only on receipt of properly executed blanks.

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections

(For complete program and abstracts of papers, see Joint Sessions.)

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections

(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

Chairman's Address—E. M. Stevenson, Bloomington.

"The Specific Treatment of Anemia." Russell L. Haden, Cleveland, Ohio.

"The Maintenance Treatment of Pernicious Anemia with Parenteral Liver Extract." Howard L. Alt, Chicago, and Richard H. Young, Evanston.

"The Clinical Application of Vitamin K." Hugh R. Butt, Rochester, Minnesota.

"Vitamin K." Raymond W. McNealy, Chicago.

"Contribution of the Laboratory to the Treatment of Hemorrhage." Armand J. Quick, Milwaukee, Wisconsin.

"The Prognosis in Juvenile Rheumatic Fever." Stanley Gibson, Chicago.

Discussion only on receipt of properly executed blanks.

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections
(For complete program and abstracts of papers, see Joint Sessions)

SECTION ON SURGERY

Frederick H. Christopher.....Chairman
Charles L. Patton.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

Joint Session with Central States Society of Industrial Medicine and Surgery

"Wound Healing." Michael Mason, Chicago.
Discussion opened by Hilger P. Jenkins, Chicago.
"Treatment of Infected Wounds." David J. Lewis, Springfield.
Discussion opened by
"Postoperative Thrombosis and Embolism." Geza de Takats, Chicago.
Discussion opened by
"Treatment of Compound Fractures." W. R. Cubbins, Chicago.
Discussion opened by
"Treatment of Burns." Chester R. Zeiss, Chicago.
Discussion opened by

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections
(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections
(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

"Care of Feet in Normal Children." Harold Sofield, Oak Park.
Discussion opened by
"Cholecystectomy; Technique and Postoperative Treatment." Illustrated with Motion Pictures. Ralph B. Bettman, Chicago.
Discussion opened by
"Cholecystitis and Cholelithiasis in Children." R. A. Tearnan, Decatur.
Discussion opened by
"Transurethral Approach to the Diagnosis and Treatment of Infections of the Seminal Vesicles." Robert H. Herbst and James W. Merricks, Chicago.
Discussion opened by
"Prostigmin in Peripheral Vascular Disease." Samuel Perlow, Chicago.
Discussion opened by

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections
(For complete program and abstracts of papers, see Joint Sessions)

SECTION ON EYE, EAR, NOSE AND THROAT

Frank W. Brodrick.....Chairman
Thomas D. Allen.....Secretary

TUESDAY MORNING, MAY 21, 1940

"The Operative Treatment of Deafness." George E. Shambaugh, Jr., Chicago.
Discussion open by Robert Henner, Chicago.
"Early Glaucoma." Virgil Wescott, Chicago.
Discussion opened by W. A. McNichols, Dixon.
"Some Psychological Effects of Deafness in Children." George L. Drennan, Jacksonville.
Discussion opened by Bert I. Beverly, Chicago.
"Diagnosis and Treatment of Sinusitis by Proetz' Method." H. L. Ford, Champaign.
Discussion opened by George Woodruff, Joliet.
"The Relation of Meckel's Ganglion to Accommodation and Intraocular Tension." W. H. Luedde, St. Louis.
Business Meeting.

TUESDAY AFTERNOON, MAY 21, 1940

INSTRUCTION COURSES
OPHTHALMOLOGY.
1. Neuro-ophthalmology. Max Jacobson, Chicago.
2. Dry Clinic. Sanford Gifford, Chicago.
OTOLARYNGOLOGY.
1. Irrigation of Frontal and Maxillary Sinuses. O. E. Van Alyea, Chicago.
2. Dry Clinic.

TUESDAY EVENING, MAY 21, 1940

6:30—Annual Banquet of the Section.
"Ocular Hemorrhages in Kodachrome." Roy O. Riser, Park Ridge.

Meeting of all Sections.
(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections.
(For complete program and abstracts of papers, See Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

Business Meeting. (Election)
Chairman's Address—F. W. Brodrick, Sterling.
"Evaluation of Accommodation and Convergence." Philip Halper, Chicago.

Discussion opened by Earle B. Fowler, Chicago.

"When Hearing Aids Should Be Used." A. A. Hayden, Chicago.

Discussion opened by E. W. Hagens, Chicago.

"Splenic Extract in Glaucoma." Michael Goldenburg, Chicago.

Discussion opened by F. Fenger, Clinical Research Dept., Armour & Company, Chicago. (By invitation.)

"Otolaryngology and the Weather." Noah D. Fabricant, Chicago.

Discussion opened by Max Berg, Chicago.

THURSDAY MORNING, MAY 23, 1940

SULPHUR SYMPOSIUM

Chemistry. Frank T. Maher, University of Illinois. (By invitation.)

Therapeutics. E. M. K. Geiling, University of Chicago. (By invitation.)

Specific Application to Otolaryngology. Glenn Greenwood, Evanston.

Specific Application to Ophthalmology. Harry Woodruff, Joliet.

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane.....Chairman
N. O. Gunderson.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

SYMPOSIUM ON SYPHILIS

"The Kahn Verification Test for Syphilis." H. J. Shaughnessy, Ph. D., Springfield.

Discussion opened by

"The Continuous Alternating Scheme of Treatment in the Control of Acquired Syphilis." R. A. Vonderlehr, Washington, D. C.

Discussion opened by G. G. Taylor, Chicago.

"Diagnosis and Treatment of Syphilis in the Infant and Teen Age." F. E. Senear, Chicago.

Discussion opened by H. J. Burstein, Decatur.

"Criteria for Discontinuing Syphilitic Treatment." S. W. Becker, Chicago.

Discussion opened by H. M. Soloway, Chicago.

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY AFTERNOON, MAY 22, 1940

"Prevention of Contact Infection in Children." Norman T. Welford, LaGrange.

Discussion opened by E. T. McEnery, Chicago.

"The Organization and Functions of the District Units of the State Department of Public Health." A. C. Baxter, Springfield.

Discussion opened by Walter C. Earle, Champaign.

"The Control of Tuberculosis." H. V. Hullerman, Mt. Sterling.

Discussion opened by W. P. Shahan, Springfield.

"Industrial Hygiene in a Public Health Program." M. H. Kronenberg, Chicago.

Discussion opened by A. E. Russell, Washington, D. C.

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

SECTION ON RADIOLOGY

Warren W. Furey .....Chairman
Harry W. Ackermann .....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

"Unusual Chest Conditions in Children." Arthur Parmelee and Fay Squire, Oak Park.

"A Few Unusual Anomalies of the Urinary Tract." J. Paul Bennett, Chicago.

Discussion opened by M. J. Hubeny, Chicago.

"The Importance of Growth Arrest Lines in Radiological Diagnosis and Prognosis." John A. Siegling, Urbana.

Discussion opened by Cesare Gianturco, Urbana.

"Gynecography." Ralph A. Reis and Robert A. Arens, Chicago.

Discussion opened by Robert A. Arens, Chicago; and Fred Decker, Peoria.

"X-Ray Therapy in Pneumonia." Fred Decker, Peoria.

Discussion opened by E. E. Barth, Chicago.

"The High Spots in Bronchiectasis." Perry B. Goodwin, Peoria.

Discussion opened by C. D. Sneller, Peoria.

Case Report—"Carcinoma of the Bladder with Roentgen films of the lesions before and after extensive Deep Radiation Therapy."

George M. Landau, Chicago.

Case Report—"An Interesting and Unusual Gastrointestinal Case with Three Separate and Distinct Lesions." Harry B. Magee, Peoria.

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

SECTION ON OBSTETRICS AND GYNECOLOGY

W. A. Malcolm.....Chairman
Herbert E. Schmitz.....Secretary

"Recent Advances in Gynecologic Endocrinology." J. P. Greenhill, Chicago.

"Organization of Obstetrical Work in Rural Hospitals." Jennings Litzenberg, Minneapolis, Minn.

Discussion opened by Milton E. Bitter, Quincy; O. H. Crist, Danville; W. M. Cooley, Peoria; and R. R. Loar, Bloomington.

(Each discussant allowed ten minutes).

"Toxemia of Pregnancies in the Galesburg Cottage Hospital." Edwin N. Nash, Galesburg.

"Toxemia of Pregnancies at the Cook County Hospital." Chester C. Doherty, Chicago.

"Lactation and Involution." R. R. Loar, Bloomington.

"The Use of Seconal as an Analgesic Agent During Labor." William G. Cummings, Evanston.

SECTION ON PEDIATRICS

H. William Elghammer.....Chairman
Bert I. Beverly.....Secretary

WEDNESDAY AFTERNOON, MAY 22, 1940

"Physiological Changes Incident to Puberty." Frederic T. Jung, Assistant Professor of Physiology, Northwestern University, Chicago.

"Menstrual Disorders During the Adolescent Period." Ralph E. Campbell, Associate Professor Obstetrics and Gynecology, University of Wisconsin, Madison, Wisconsin.

"Obesity in Childhood and Adolescence." L. H. Newburgh, Professor of Medicine, University of Michigan, Ann Arbor, Michigan.

"Educational Problems of Adolescence." Ernest O. Nelby, Ph.D., Dean, School of Education, Northwestern University, Chicago.

SECRETARIES' CONFERENCE

A. R. Brandenberger, Chairman.....Danville
A. R. Bogue, Vice-Chairman.....Rochelle
Carl E. Clark, Secretary.....Sycamore

TUESDAY EVENING, MAY 21, 1940

6:00—Dinner Meeting.

"Post Graduate Services for County Medical Societies." Robert S. Berghoff, Chairman, Scientific Service Committee, Chicago.

"How Post Graduate Services for County Medical Societies Can Be Improved." Harold M. Camp, Secretary, Illinois State Medical Society, Monmouth.

"Relationship of the Secretary's Office to the Educational Committee." Charles P. Blair, Member Educational Committee, and Secretary, Warren County Medical Society, Monmouth.

"Participation of Local County Society Members in all Programs of the County." Roswell T. Pettit, Secretary, LaSalle County Medical Society, Ottawa.

Round Table Discussion of Problems of County Secretaries.

H. Prather Saunders, Secretary, Chicago Medical Society, Chicago.

C. P. Holoffe, Secretary, Franklin County Medical Society, West Frankfort.

A. R. Brandenberger, Secretary, Vermilion County Medical Society, Danville.

William R. Marshall, Secretary, DeWitt County Medical Society, Clinton.

PHYSICIANS' ASSOCIATION DEPARTMENT OF PUBLIC WELFARE STATE OF ILLINOIS

George Perkins.....Acting President
J. W. Klapman.....Secretary-Treasurer

TUESDAY MORNING, MAY 21, 1940

"Pick's Disease." D. Levitin, Chicago.

"Juvenile Huntington's Chorea." Eugene Falstein, Theodore F. Stone, Chicago.

"Comparative Effects of Coma Doses of Insulin Administered Intravenously and Subcutaneously in Psychotic Patients." Irving C. Sherman, John C. Mergener, Abraham A. Low, Chicago.

"Nitrogen Treatment in Schizophrenia." Carl E. Lengyel, Elgin.

SYMPOSIUM ON PROBLEMS IN NEUROSYPHILIS

"Cardiovascular and Systemic Morbidity Following Hyperpyrexia in Central Nervous System Syphilis." Alan A. Lieberman, Charles Katz, Elgin.

"Modification of the Use of Typhoid Vaccine in the Production of Hyperpyrexia." H. H. Goldstein, Jack Weinberg, Chicago.

"Surgery in Syphilitics With a Study of Cases in Mental Hospitals." George A. Wiltrakis, Anthony V. Partipilo, Louis Olsman, Chicago.

Role of Neurosyphilis in Disturbances of "Anal Sphincter Tone." (To be read by title.) Bernard L. Greene, Louis H. Block, Elgin.

CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY

Harold A. Vonachen, President.....Peoria, Illinois
Urban E. Gebhard, Vice-President...Milwaukee, Wis.
Frank P. Hammond, Secretary-Treasurer.Chicago, Ill.
Edward C. Holmblad, Program Chairman.Chicago, Ill.

TUESDAY MORNING, MAY 21, 1940

9:30—"Medicolegal Typing of Occupational Disease Cases." (With four illustrative case histories.) C. O. Sappington, Chicago.

10:00—Ten Minute Reports followed by Round Table Discussion as to the "Newer Developments and Present Status of Following Industrial Problems."

"Physical Examinations." Urban E. Gebhard, Milwaukee, Wisconsin.

"Specific Loss Appraisal." V. S. Cheney, Chicago.

"Hernia." Will Lyon, Chicago.

"Absenteeism." James H. Finch, Champaign.

"Back Injuries." Fred Slobe, Chicago.

"Syphilis in Industry." Harold A. Vonachen, Peoria.

"Economics of Industrial Medicine and Surgery." James A. Valentine and Fred M. Miller, Chicago.

12:00—Luncheon.

TUESDAY AFTERNOON, MAY 21, 1940

Joint Session with Section on Surgery.

"Wound Healing." Michael Mason, Chicago.

Discussion opened by Hilger P. Jenkins, Chicago.

"Treatment of Infected Wounds." David J. Lewis, Springfield.

Discussion opened by

"Postoperative Thrombosis and Embolism." Geza de Takats, Chicago.

Discussion opened by

"Treatment of Compound Fractures." W. R. Cubbins, J. J. Callahan, and Carlo S. Scuderi, Chicago.

Discussion opened by

"Treatment of Burns." Chester R. Zeiss, Chicago.

Discussion opened by

(For abstracts of papers, See Section on Surgery.)

VETERANS' SERVICE COMMITTEE DINNER

The annual dinner of the Veterans' Service Committee will be held on Tuesday evening May 21, 1940 at 6:00 p. m.

Dr. F. O. Fredrickson, Chairman of the Committee, will officiate as presiding officer, and their dinner program will be announced in the May issue of the ILLINOIS MEDICAL JOURNAL.

The Illinois State Medical Society will be host to the Women Members of the State Medical Society at a dinner in Peoria, Tuesday Evening, May 21, 1940.

The local Chairman of Arrangements is Dr. Margaret B. Meloy of Peoria. Membership tickets in the State Society should accompany requests for reservation.

The following is the tentative Dinner Program:

Short Address—Dr. Elizabeth R. Miner, President Illinois State Branch No. 17 A. M. W. A.

Other addresses by Dr. Nelle S. Noble, Des Moines, Iowa, President A. M. W. A.; Dr. Bertha Van Hoosen, Chicago; Dr. Elizabeth B. Ball, Springfield; Dr. Esther S. Hodel, Morton; Dr. Carolyn N. MacDonald and others.

WOMAN'S AUXILIARY PROGRAM

All General Meetings and Social Activities Are Open to All Doctors' Wives.

MONDAY, MAY 20, 1940

1:00-9:00 P. M.

Registration—Pere Marquette and Jefferson Hotels.

TUESDAY, MAY 21, 1940

8:00 A. M. Registration—Pere Marquette and Jefferson Hotels.

10:00 A. M. Pre-convention Board Meeting—Jefferson Hotel. (Board Members Only.)

Mrs. Charles C. Winning, President.

11:00 A. M. "School of Instruction on Auxiliary Activities." Jefferson Hotel. (Open to all doctors' wives.)

Mrs. George Walbright, Presiding.

Mrs. Harry Otten, Co-Chairman.

12:30 Luncheon—Jefferson Hotel, French and Jefferson Rooms. (Open to all doctors' wives.)

Mrs. Charles C. Winning, Presiding.

Mrs. Carl Sibilsky, Local Chairman.

Speakers:

Address of Welcome. Mrs. Orville Barbour.

Convention Announcements. Mrs. Milo Easton.

Address. Mrs. Rollo Packard, President National Auxiliary.

2:00 P. M. General Meeting—Gold Room, Jefferson Hotel. (Open to all doctors' wives.)

Mrs. Charles C. Winning, Presiding.

Invocation. Bishop W. L. Essex, Bishop Quincy Diocese Episcopal Church.

Welcome. Mayor David McCluggage.

Response. Mrs. William Raim.

3:45 P. M. Tour of Holt Manufacturing Company. (Caterpillar Tractors.) (Open to all doctors' wives.)

Cars leaving Liberty Street entrance of Jefferson Hotel.

6:30 P. M. Dinner—Pere Marquette Ball Room, followed by Fashion Revue of private collection from New York and Chicago, with professional models. (Open to all ladies attending the convention.)

WEDNESDAY, MAY 22, 1940

8:00 A. M. Registration—Pere Marquette and Jefferson Hotels.

8:00 A. M. Board Breakfast. (Board Members Only.)

9:15 A. M. Busses leave for Breakfast—Peoria Country Club. (Open to all doctors' wives.)

9:30 A. M. General Meeting—Ball Room, Jefferson Hotel. (Open to all doctors' wives.)

Mrs. Charles C. Winning, Presiding.

Memorial Services. Mrs. Orville Barbour, Chairman.

Scripture and Prayer. Mrs. A. A. Knapp.

Solo—Lord's Prayer (Stenson). Mrs. Clarence Magaret.

In Memoriam.

Memorial Roll Call.

Candle Light Service.

Remembrance Flowers. Mrs. Orville Barbour.

Solo—Lords Prayer (Stenson). Mrs. Clarence Magaret.

"Taps" (All stand in memory.) Mrs. Clarence Magaret.

12:00—Return from Country Club Breakfast.

12:45—President's Luncheon, French and Jefferson Room, Jefferson Hotel.

Mrs. Charles C. Winning, Presiding.

Mrs. Allen Foster, Local Chairman.

Announcements. Mrs. Milo Easton, Convention Chairman.

Speakers: (To be announced later.)

Followed by Mrs. E. C. Kelly, Chairman (Reception.)

3:30 P. M.—Post Convention Board Meeting. (Board Members Only.)

Mrs. H. J. Dooley, Presiding.

5:00 P. M.—Open House held by Peoria doctors and their wives. (Open to all doctors and their wives attending the convention.)

Indicate at time of registration if you wish to attend open house and also if you have already been asked. If not, Hostess Committee will arrange for you.

7:00 P. M.—President's Dinner Dance.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 21, 1940

12:30—Luncheon—Jefferson Hotel, French and Jefferson Rooms.

2:00 P. M.—Tour of City for ladies not attending Auxiliary activities.

3:45 P. M.—Tour of Holt Manufacturing Company. (Caterpillar Tractors.) (Cars leaving Liberty Street entrance of Jefferson Hotel.)

6:30 P. M.—Dinner—Pere Marquette Ball Room, followed by Fashion Revue.

WEDNESDAY, MAY 22, 1940

9:15 A. M.—Busses leave for Breakfast—Peoria Country Club. (Busses leave Main Street entrance of Pere Marquette Hotel, and Fulton Street entrance of Jefferson Hotel.)

12:00—Return from Country Club Breakfast.

12:45—President's Luncheon, French and Jefferson Room, Jefferson Hotel.

5:00 P. M.—Open House held by Peoria Doctors and their wives.

7:00 P. M.—President's Dinner Dance.

RULES GOVERNING PRESENTATION OF PAPERS

"All papers read by members shall be limited to twenty minutes, and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary of the Section when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

"A paper not heard in its scheduled turn shall be held subject to call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All subjects shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From By-Laws of Illinois State Medical Society.)

SCIENTIFIC EXHIBITS

Frank J. Jirka, Chairman.....Chicago
Nathan Smith Davis, III, Director of Exhibits .....Chicago

Booth —. "Posture Plays an Important Part in the Physical Therapy of Bed and Convalescent Patients." American Physiotherapy Association, Chicago.

Six posters, 22 x 28 inches with photographs showing the following: Good and bad posture of an arthritic in bed with a view to preventing the following deformities—poor chest posture affecting vital capacity, forward head, knee flexion contractures, adduction and inward rotation of shoulders, adduction and external rotation of legs, foot drop and wrist drop;

Poor posture in a wheel-chair showing swelling, in a lower leg and the correction;

Instruction to a fracture case in a walker to precede instruction in walking with crutches;

Instruction in crutch-walking to a fracture case showing crutches of incorrect length poorly placed, and soft shoes with corrections.

Booth —. "Plastigut—A New Suture Development." Joseph E. Bellas, The Collins Clinic, Peoria.

A comparative study of suture reactions with current sutures and Plastigut. A new classification of sutures is brought forth as a basis for future evalution of sutures. Plastigut is a new suture which plastics are the essential components. Plastigut is supported by extensive, experimental, clinical and microphotographic studies and is offered to the surgical profession as an approach to the ideal suture.

Booth —. "Avitamosis in the Alcoholic." Don C.

Sutton and John Ashworth, Northwestern University School of Medicine, Chicago.

The exhibit will consist of charts, color transparencies and still projection of color transparencies. The charts will be descriptive of especially the neuritis and pellagra lesions. A chart of the vitamins involved, and an outline of treatment.

Booth —. "End Results in Pulmonary Tuberculosis." Jerome R. Head, Edward Sanatorium, Naperville.

The exhibit will consist of printed charts and tables showing the five-year end results in 500 cases of pulmonary tuberculosis. There will be slides also showing the results of the various types of cases.

Booth —. "Surgical Pathological Studies of Carcinoma of the Rectum and Colon." R. K. Gilchrist, Rush Medical College, Presbyterian Hospital, Chicago.

This exhibit is a summary of the findings in 125 surgical specimens. The distribution of metastases to the 7000 lymph nodes examined microscopically from these specimens is shown by charts, specimens and illustrations. The results of experimental studies on the manner of spread of carcinoma through the lymph system, are shown. Specimens and charts demonstrate the perforation of diverticula in the presence of carcinoma. The effect of size of tumor, duration of symptoms, grade of tumor, age and sex of patient are shown in their relation to lymphatic metastases.

Booth —. "Segmental Retrograde Sclerosis in the Treatment of Leg Varices." James Graham, Springfield Clinic, Springfield.

Models and translites illustrate four classes of leg varices, bases on valvular competency. Saphenous vein ligation, combination with retrograde injection of sclerosing substance, is advocated for those classes in which valvular incompetency plays a major role. In this connection, segmental retrograde sclerosis by the ureteral catheter method.

Booth —. "Acute Appendicitis." William Kleitsch, R. B. Malcolm, L. J. Rossiter, Warren H. Cole, Department of Surgery, University of Illinois College of Medicine, Chicago.

About six models illustrating the stages of inflammation incident to acute appendicitis with and without perforation. One or two drawings to illustrate dangers incident to catharsis. Several placards supply information regarding incidence, therapy, etc.

Booth —. "What Radiation Technic Gives the Best Clinical Results in Uterine Cervical Cancer?" Harold Swanberg, Quincy X-Ray and Radium Laboratories, Quincy.

Exhibit will consist of charts showing the results obtained and the technics of radiation being used at the leading radiotherapeutic centers of the world in the treatment of uterine cervical malignancy.

Booth —. "The Neurocirculatory Clinic. Its Scope and Material." Geza deTakats, William C. Beck, Joseph H. Jesser, Donald Miller, P. J. Sarma, University of Illinois School of Medicine, Chicago.

Instead of separating patients in medical, surgical, orthopaedic, and neuro-phychiatric clinics, it is the doctors that are grouped around the patient. As a general principle, a synthesis of knowledge is emphasized instead of a fragmentation by overspecialization. This is demonstrated on five disease entities, namely: congenital vascular anomalies, varicose veins, peripheral vascular disease, hypertension, pulmonary embolism.

In each group the diagnostic methods, the types of treatment and the results are shown by charts, drawings, photographs and individual case histories. Such a group-study improves diagnosis, accumulates material for undergraduate and postgraduate teaching and stimulates clinical research.

Booth —. "Controlled Evaporation of Liquid Oxygen. A new and simple method of production of oxygen gas at the bedside." John A. Mathis, M.D., and Mr. Roland Milan, Pinckneyville.

Apparatus measures 28 inches diameter by 40 inches in height. No cylinders are used, but liquid oxygen in standard commercial 25 liter container supplies the source of gas. The apparatus comprises a method of returning liquid oxygen to the gaseous state at any rate of speed desired, under complete control of the operator, together with safety measures which make the apparatus safer than cylinders of the gas under pressure.

This idea and its execution are entirely new, and have not been demonstrated elsewhere. By its use, it is possible to use 6 liters of oxygen per minute at a cost of about 5c per hour. In cylinders, the cost is from 15 to 30 cents per hour. We have tried out the apparatus for two years, and it has no faults or dangers.

Booth —. "Serum as Substitute for Blood in Transfusions." S. O. Levinson, H. Necheles, F. Neuwelt, Michael Reese Hospital; Samuel Deutsch, Serum Center and Department of Gastro-Intestinal Research; Chicago.

Pictures, charts, graphs, tables, hymograph records and short explanatory descriptions of experiments proving the practicability and advantages of serum versus blood transfusion. Pictures of bleeding of donors and of processing of serum and its preparation for storage, transportation and transfusion. Charts of serum transfusion in patients. Complete paper appeared in A.M.A. Journal of February 10, 1940.

Booth —. "Pulmonary Tuberculosis. Diagnosis and Treatment by Surgical Collapse." Municipal Tuberculosis Sanitarium, Chicago.

Four illuminated cabinets demonstrated by x-ray films and pathologic specimens, pulmonary tuberculosis in all stages of the disease.

Collapse treatment and the results obtained by pneumothorax and surgical procedures.

Booth —. "Ectopic Pregnancy." Frederick H. Falls, Miss Charlotte S. Holt, Illinois State Department of Public Health, and University of Illinois College of Medicine, Chicago.

A series of ten bas-relief models cast in special plaster composition and painted in natural colors, depicting various types of ectopic pregnancy, such as interstitial, ovarian, isthmic, ampullary and escondary abdominal, a colpocentesis of a pelvic hematocele, broad ligament hematoma, a fibroid uterus causing compression of tube, and bilateral tuhal pregnancy. A model showing the story of normal fertilization and nidation and sites of ectopic implantation. These will be types of ectopic pregnancy as seen at operation by the surgeon. Lettered charts outlining etiology, diagnosis, treatment and mortality statistics will be added. Photomicrographs of each type will show as transparencies, and a unique x-ray picture of a ruptured interstital ectopic pregnancy with a baby weighing five pounds, will be shown.

Booth —. "Disease of the Thyroid Gland." Arnold S. Jackson, The Jackson Clinic, Madison, Wisconsin.

Models and charts on diagnosis and treatment of cretins. Maps, charts, showing growth of cretinism and distribution of the 500 cases reported in the United States. Colored illustrations showing technique of thyroidectomy by electro-surgery for exophthalmic goiter. Colored illustrations and models of

the various types of goiter, their distinguishing characteristics, and the methods of treatment. Illustrations, charts and data on hypothyroidsim and myxedema illustrating typical and atypical cases, signs, symptoms, methods of treatment and results. Moving pictures of cretins, diagnosis of various types of goiter and the technique of thyroidectomy.

Booth —. "Aerobiology as Applied to Allergy." Oren C. Durham, Abbott Laboratories, North Chicago.

Apparatus and methods used and results obtained in 350 uniform seasonal atmospheric surveys (1925-1939) and 400 upper air tests of pollens, fungus spores and insect particles. Most of the work has been done in the United States, Alaska and Canada (cooperation of United States Weather Bureau and Canadian Meteorological Service). Limited data for Cuba, Mexico, Argentina and Japan. Maps, Tables and Graphs, including new "ragweed pollen index" of North America. Technique of identification and counting will be demonstrated. A reference collection of 400 pollen and fungus spore specimens will afford abundant opportunity for practice.

Booth —. "Disease of the Lung." E. J. Kraus and H. M. Pollak, St. Francis Hospital, Peoria.

Pathological specimens of various lung diseases; histological photographs, case histories and x-ray films.

Booth —. "Technique of Subtotal Thyroidectomy Under Local Anesthesia." David A. Bennett, Coleman Clinic, Canton.

Demonstration of technique used in subtotal throidectomy by use of local anesthesia. Demonstrated by drawings and colored paintings of the various steps or stages of the operation. Colored movies are also used in the booth which show technique of the operation.

Booth —. "Clinical Cystometry. Presentation of a New Cystometrograph." Herbert E. Landes and Harold C. Voris, Departments of Urology and Neurosurgery, Loyola University College of Medicine, Mercy Hospital, and Loyola Clinics, Chicago.

Exhibit consists of photograph of cystometrograph in operation. Model of instrument itself. Twenty-six charts showing a wide variety of tracings obtained in different neurologic lesions together with a chart showing innervation of bladder and urethra and finally a printed chart summarizing the content of the exhibit.

Booth —. "Cerebral Manifestations in the Newborn." Abraham Levinson, Cook County Hospital, Chicago.

A series of charts outlining the etiology, symptomatology, and treatment of Cerebral Manifestations of the Newborn, including anoxemia, cerebral agenesis, acute infections, tetany and hypoglycemia. The exhibit will also include lantern slides and specimens.

Booth —. "Plastic and Reconstructive Surgery." Paul W. Greeley, University of Illinois College of Medicine, Department of Surgery, Division of Plastic Surgery, Chicago.

An exhibition of representative cases in photograph demonstrating a wide variety of plastic problems, together with the results obtained. Each case will be briefly discussed by suitable legends or diagrams. On another card will be noted existing axioms of plastic surgery pointing out certain of the more common principles in this field.

Booth —. "Peripheral Vascular Diseases." G. H. Marquardt, T. R. VanDellen, R. C. Roberts, S. Perlow, and N. S. Davis, III, Florsheim Clinic, Northwestern University College of Medicine, Chicago.

Results of management of those with peripheral arteriosclerosis and thrombo-angiitis obliterans and those with vasospastic arterial disease over a period of eight or ten years. Plethysmographic studies before and after various types of therapy.

Booth —. "The Tumor Clinic in the Small Private Hospital." Ravenswood Hospital Tumor Clinic (N. P. Saunders, M.D.) Ravenswood Hospital, Chicago.

An exhibit demonstrating the method of establishing a tumor clinic in a small private hospital. The method of conducting the clinic and advantages of the clinic to patients, physicians and the hospital.

(a) Exhibit includes charts showing activities of the clinic such as examining, diagnosing and outlining treatment of tumor cases.

(b) Demonstration of cases and specimens before staff meetings.

(c) Perfection of a follow-up system.

Booth —. "Gall Bladder Disease. The Gall Bladder Study Group of Michael Reese Hospital." Heinrich Necheles, Sidney A. Portis and Ralph Bettman, Michael Reese Hospital, Chicago.

The exhibit will show the physiologic, medical and surgical aspects of gall bladder disease with a discussion of the various types of work done in the Department of Physiology relative to the gall bladder. The medical pre- and post-operative management of gall bladder disease will be discussed. The surgical aspect will show the results of the surgical approach to the problem of bile tract disease, the indications for surgery, the types of incisions and the mortality and morbidity statistics all of which will be amply illustrated.

Booth —. "Implantation of the Ureter into the Colon for Exstrophy of the Urinary Bladder. Ureterointestinal anastomosis." Roy E. Brackin, Rush Medical College, University of Chicago, Department of Surgery, Chicago.

The exhibit consists of photographs of patients before and after transplantation of the ureters to the colon and roentgenological studies, blood findings, clinical reactions and end results up to one year after bilateral ro-signoidal anastomosis in the treatment of exstrophy of the urinary bladder. One successful case of twenty years is presented with complete charts of pre- and post-operative blood and urinary tract studies up to one year after operation including bilateral transplantation of the ureters and total cystectomy, one case of three years of age. This method of procedure will be shown by drawings. This was shown in the scientific exhibits of 1939 and the experimental results demonstrated. The present exhibit presents the results in a small number of cases, among whom there were no deaths following the operation. A motion picture in color of the procedure will be shown. This film is about 300 feet.

Booth —. "Occupational Hazards." Department of Public Health, State of Illinois, A. C. Baxter, Director; Henry Horner, Governor, Springfield.

THE HALL OF HEALTH

PEORIA ARMORY

The following exhibits, compiled for lay education, may be seen at the Peoria Armory:

American Association of Medical Social Workers.

American Red Cross Civilian Relief.

American College of Surgeons. "Fractures."

American Medical Association. "Food Fads." "Heart

Disease." "Dangers of Self-Diagnosis and Self-Medication." "Prevention of Eye Injuries." "Prevention of Burns."

American Social Hygiene Association. "Illegal and Unethical Practices in Relation to Syphilis and Gonorrhea."

Cancer Committee, Illinois State Medical Society. Women's Field Army, Illinois Division of the American Society for the Control of Cancer. "Prevention and Control of Cancer."

Chicago Society of Allergy. "What Is This Thing Called Allergy?"

Chicago Heart Association. "Prevention of Heart Disease Is Better Than Cure."

Illinois Physicians and Surgeons. Pictures of pioneer physicians and surgeons. Many are from collection of Dr. Carl E. Black, Jacksonville.

Chicago Rapid Transit Company, Medical Department. "The Evolution of Resuscitation."

Works Progress Administration of Illinois. Health Projects in Illinois."

Woman's Auxiliary—Illinois State Medical Society. "History of Medicine in Illinois. Illinois Occupational Therapy Association. "Occupational Therapy." Illinois State Planning Commission. "General Health and Educational Exhibit."

Illinois Society for Prevention of Blindness (in cooperation with the Works Progress Administration). "Prevention of Blindness."

Illinois Congress of Parents and Teachers. "Health Activities."

Illinois Society for Mental Hygiene. "The Physician As a Mental Hygienist."

Department of Public Health, State of Illinois. "Public Health and Preventive Medicine."

Illinois State Nurses' Association.

Illinois Dietetic Association. "What Is Your Score?"

Enucational Committee—Illinois State Medical Society. "Your Medical Society and You."

Department of Public Health—(Division of Maternal and Infant Hygiene of the State of Illinois). University of Illinois College of Medicine (Department of Obstetrics and Gynecology). Maternal Welfare Committee (Illinois State Medical Society). "The Essentials of Prenatal Care."

Metropolitan Life Insurance Company. "New Methods for Pneumonia Control."

St. Francis Hospital, Peoria. "Pathological Specimens."

Peoria Municipal Tuberculosis Sanitarium. "Diagnosis and Treatment of Pulmonary Tuberculosis."

Peoria County Tuberculosis Association. "Tuberculosis."

Lions Club of Peoria. "Safety and Health."

Peoria Council of Girl Scouts, Inc. "Child Care, a Part of the Girl Scout Program."

Peoria Department of Health. "Quackery."

Peoria Police Department. "Accident Investigation Bureau" (First Aid Methods and Equipment used by Police in Investigation of Traffic Accidents).

Peoria Maternity Center. "Maternal Welfare Work in Peoria."

Boy Scouts of America. Creve Coeur Council. "Safety Through Skills."

Visiting Nurse Association of Peoria. "How to Be Happy Tho' Sick."

Illinois Bell Telephone Company. "First Aid Demonstration."

Public Service Company of Northern Illinois. "Night Hazards of Driving."

Sharp & Smith Hospital Division—A. S. Aloe Company. "The Original Dionne Incubator."

TECHNICAL EXHIBITORS AT THE 1940 ANNUAL MEETING

Abbott Laboratories, North Chicago, Illinois.

A. S. Aloe Company, St. Louis, Missouri.

Arlington Chemical Company, Yonkers, New York.

Bard Parker Company, Inc., Danbury, Connecticut.

W. D. Bates, Rockford, Illinois.

Bilhuber-Knoll Corporation, Orange, New Jersey.

The Borden Company, New York, N. Y.

Ciba Pharmaceutical Products, Inc., Summit, New Jersey.

The Coca-Cola Company, Atlanta, Georgia.

Curvlite Products, Inc., New York, N. Y.

Davies, Rose & Company, Limited, Boston, Massachusetts.

F. A. Davis Company, Philadelphia, Pennsylvania.

DePuy Manufacturing Company, Warsaw, Indiana.

Doho Chemical Corporation, New York, N. Y.

Eli Lilly and Company, Indianapolis, Indiana.

H. G. Fischer & Company, Chicago, Illinois.

C. B. Fleet Company, Lynchburg, Virginia.

General Electric X-Ray Corporation, Chicago, Illinois.

Gerber Products Company, Fremont, Michigan.

Hamilton-Schmidt Surgical Company, St. Louis, Missouri.

The G. F. Harvey Company, Saratoga Springs, N. Y.

H. J. Heinz Company, Pittsburgh, Pennsylvania.

Horlick's Malted Milk Corporation, Racine, Wisconsin.

Jones Metabolism Equipment Company, Chicago, Illinois.

The "Junket" Folks, Little Falls, New York.

Lederle Laboratories, Incorporated, New York, N. Y.

Libby, McNeill & Libby, Chicago, Illinois.

J. B. Lippincott Company, Philadelphia, Pennsylvania.

A. E. Mallard, Detroit, Michigan.

Mead Johnson and Company, Evansville, Indiana.

Medical Arts Supply Company, Chicago, Illinois. (Lepel High Frequency Laboratories.)

The Medical Protective Company, Wheaton, Illinois.

Mellin's Food Company, Boston, Massachusetts.

The Mennen Company, Newark, New Jersey.

M & R Dietetic Laboratories, Inc., Columbus, Ohio.
The C. V. Mosby Company, St. Louis, Missouri.
V. Mueller and Company, Chicago, Illinois.

N

O

Park, Davis & Company, Detroit, Michigan.
Pet Milk Sales Corporation, St. Louis, Missouri.
Petrolagar Laboratories, Inc., Chicago, Illinois.
Philip Morris & Company, Ltd., Inc., New York, N. Y.

Q

R

W. B. Saunders Company, Philadelphia, Pennsylvania.
Schering Corporation, Bloomfield, New Jersey.
Otto Schweinberger & Company, Moline, Illinois.
Sharp & Dohme, Incorporated, Philadelphia, Pennsylvania.
S.M.A. Corporation, Chicago, Illinois.
Smith, Kline & French Laboratories, Philadelphia, Penna.
E. R. Squibb & Sons, New York, N. Y.
Standard X-Ray Company, Chicago, Illinois.
Frederick Stearns & Company, Detroit, Michigan.
Sutliff and Case Company, Inc., Peoria, Illinois.

T

U & V

White Laboratories, Inc., Newark, New Jersey.
John Wyeth & Brother, Inc., Philadelphia, Pennsylvania.
X-Ray Equipment Company, Chicago, Illinois.
The Zemmer Company, Pittsburgh, Pennsylvania.

ILLINOIS STATE MEDICAL SOCIETY

One-Hundredth Annual Meeting

PEORIA, ILLINOIS

May 21, 22, 23, 1940

OFFICERS

JAMES H. HUTTON, *President*.....Chicago
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(Appointed by President each year prior to annual meeting)

—Names to come—

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ILLINOIS STATE MEDICAL SOCIETY

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Peoria—May 21, 22, 23, 1940

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ILLINOIS STATE MEDICAL SOCIETY
ONE HUNDREDTH ANNUAL MEETING

Peoria, Illinois
May 21, 22, 23, 1940

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MRS. C. S. TURNER.....*Chairman*

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Mrs. George Cohen .....Washington
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You are heartily invited to inspect the comprehensive selection of pharmaceutical specialties on display including large volume Intravenous Solutions, Metaphen, Vitamins, Procaine, Ephedrine and Pollen products. Nembutal and Pentothal Sodium, the new intravenous quick-acting short-duration anesthetic will also be featured.

Please feel free to discuss the newer products with the Abbott-trained representatives in attendance.

A. S. ALOE COMPANY—Booth

A. S. Aloe Company of St. Louis will display a complete general line of physicians' instruments, supplies and equipment. Aloe Steeline, the improved design in treatment room furniture, will be featured, also the Aloe Diagnostic X-Ray. The display will be in charge of Aloe representative, Val H. Drennan.

THE ARLINGTON CHEMICAL COMPANY—Booth 12

The Arlington Chemical Company invites you to inspect their line of Proteins and Pollens for diagnosis and treatment of allergic conditions. And their new product—AMINOIDS. Aminoids represents a combination of amino acids and has proved of marked therapeutic value in malnutrition, underweight and loss of appetite.

Dr. L. A. Kitzman, in charge of the exhibit, will be happy to answer inquiries regarding this new product; also inquiries relative to hayfever, asthma, etc.

BARD PARKER COMPANY, INC.—Booth 44

Bard Parker will exhibit the following products: Rib-Back surgical blades, Renewable Edge scissors, Hematological Case for obtaining blood samples at the bedside, Ortholator for obtaining accurate dental radiographs, Formaldehyde Germicide and Instrument Containers for the rust-proof sterilization of surgical instruments.

W. A. BATES—Booth

BILHUBER-KNOLL CORPORATION—Booth 45

We, the Bilhuber-Knoll Corporation, welcome you. Here you will again meet Mr. Kidwell and Mr. Murbach who are ably prepared to answer questions regarding Dilaudid, Metrazol, Theocalcin, and other N.N.R. products of our manufacture. They will also be glad to acquaint you with our policy relating to the production in our Orange, N. J. plant of "original medicinal chemicals" which merit your continued daily use and your endorsement.

THE BORDEN COMPANY—Booth 10

Full information on BIOLAC, the new *liquid* modified milk for infants, will be available at the Borden Booth.

Also exhibited will be other Borden products for infant feeding, notably Klim, Dryco, Beta Lactose, Merrell-Soule products, and Borden's Irradiated Evaporated Milk.

CIBA PHARMACEUTICAL PRODUCTS, INC.—Booth 24

Ciba Pharmaceutical Products, Inc., will feature their well-known line of specialties, including Coramine, Nupercainal, Digifoline, Trasentin, etc. Latest information, literature and reprints of recent papers by outstanding endocrinologists and investigators will be available describing Perandren and Di-Ovocylin and their clinical application where androgenic and estrogenic therapy is indicated. Representatives of the firm will be in attendance and will be glad to answer any questions in regard to the products displayed.

THE COCA COLA COMPANY—Booth 20

The Coca-Cola Company will be host to the doctors calling at their booth, and Coca-Cola will be served for the pause that refreshes.

CURVLITE PRODUCTS, INC.—Booth 53

DAVIES, ROSE & COMPANY, LIMITED—Booth "C"

Davies, Rose & Company, Limited, Boston, Mass., hope that you will visit their headquarters. The preparations that this firm is exhibiting have a world-wide reputation. Physiological or chemical tests are made to assure their standardization. Clinical experience vouches for their dependability.

Mr. G. L. Cunningham will be at the booth to welcome you.

F. A. DAVIS COMPANY—Booth 25

Be sure to visit booth 25 and examine our most recent publications such as Lederer—Ear, Nose and Throat; Bland & Montgomery—Practical Obstetrics; Reimann—Treatment in General Medicine; Stroud—Diagnosis and Treatment of Cardiovascular Disease; Piersol—The Cyclopedia of Medicine; Bland—Gynecology; Smith—proctology for the General Practitioner; Robertson—Diagnostic Signs, Reflexes and Syndromes. F. A. Davis Company.

DePUY MANUFACTURING COMPANY—Booth 14

DePuy Manufacturing Company will exhibit for your consideration, Fracture Appliances to be used by the exacting and careful surgeon. Bone Screws, Bone Plates, Screw Drivers, the new White Type Sterilizing Screw Rack, Friddle Screw Driver, White Type Mortising Chisel, and the improved Lovejoy Drill will be on display. We will have a complete line of Splints for your consideration.

We want you to appreciate the fact that you can come into our Booth and feel at home and there will be no high pressure methods used. Mr. James Rippey will be in charge of this Exhibit, and he is amply able to care for your needs.

THE DOHO CHEMICAL CORPORATION—Booth 21

The Auralgan Exhibit consists of a model of the human auricle four feet high together with a series of twenty-four three dimensional ear drums, modeled under the supervision of outstanding otologists. Each of these drums depicts a different pathologic condition based upon actual case observation, and prepared in so far as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

As the observed looks into the large ear through a proportionately sized speculum, the ear drums appear successively within the canal so as to similate actual conditions seen in life. The successive changes of the ear drums are affected by automatic mechanism, and accompanied by a brief description of the condition.

This is the first time that such a complete modeling of ear drums has ever been executed in this scale.

ELI LILLY AND COMPANY—Booth 6

Eli Lilly and Company produced the first commercial preparation of Insulin, contributed to development of liver therapy, and has been responsible for many other therapeutic advancements. Products of importance in routine practice will be displayed.

H. G. FISCHER & COMPANY—Booth 23

H. G. Fischer & Company will display 1940 models of x-ray and short wave apparatus which are so distinctive that every physician should consider inspection a convention obligation. The complete H. G. Fischer & Company line includes shock-proof x-ray apparatus, short wave units, combination cabinets, galvanic and wave generators, ultra violet and infra-red lamps and many other units, accessories and supplies.

Physicians attending the convention are invited to ask for demonstrations of apparatus in which they are interested and to consult with FISCHER representative regarding technics made available by FISCHER APPARATUS.

C. B. FLEET COMPANY—Booth 43

PHOSPHO-SODA (FLEET), a saline laxative, has been presented to the Medical Profession for over fifty years. This eliminant is suggested when a rapid non-griping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

GENERAL ELECTRIC X-RAY CORPORATION—BOOTH 55

Each year the General Electric X-Ray Corporation endeavors to develop for the profession, new and better x-ray and electromedical apparatus.

A visit to the G-E exhibit will prove most helpful to you, whether you are planning for a new installation or the modernization of your present electromedical facilities.

GERBER PRODUCTS COMPANY—Booth 35

Ten new foods which have just been added to the Gerber Baby Foods, will be on display in the Gerber Booth.

Copies of both the professional literature and the booklets for mothers are there for your examination and will be sent to you upon request.

HAMILTON-SCHMIDT SURGICAL COMPANY—Booth 28

The Hamilton-Schmidt Surgical Company of St. Louis has an exhibit at this meeting of the Illinois State Medical Society to exhibit and demonstrate Burdick Physio-Therapy apparatus. They expect to show an interesting collection of genuine Stille stainless steel Swedish instruments. The new improved Safti-Flask of the Cutter Laboratory Dextrose solutions. You are invited to visit this exhibit.

THE G. F. HARVEY COMPANY—Booth 17

H. J. HEINZ COMPANY—Booth 39

Physicians interested in prescribing for the feeding—especially of infants, older children or adults requiring soft diets, will be interested in the new Heinz exhibit where Strained and Junior Foods are attractively displayed. Mr. J. P. Dermody is in attendance and will be happy to supply information on these foods.

The eighth edition of the popular Heinz Nutritional Charts, containing greatly expanded charts and new data on vitamin content of foods, is ready and will be mailed on request.

HORLICK'S MALTED MILK CORP.—Booth 11

Nourishing, digestible, appetizing—these are the three outstanding qualities for which HORLICK'S is famous, whether in powder or tablet form. Visit the exhibit booth. You will be interested in the many uses from infant feeding to old age—note especially the convenience of the Tablets in ulcer dicts.

JONES METABOLISM EQUIPMENT CO.—Booth 5

The "Jones Metaholism Equipment Company" will feature

as their display, the Jones MOTOR BASAL Metabolism apparatus.

A special feature of this unit is that it contains no water, and requires no calculation in the determination of the basal metabolic.

"THE 'JUNKET' FOLKS"—Booth 52

"The 'JUNKET' FOLKS,' Chr. Hansen's Lahoratory, Inc., Little Falls, N. Y. will exhibit at this year's annual meeting. Graduate dietitian in attendance at the exhibit. Free servings of rennet-custards made with "Junket" Rennet Powder and "Junket" Rennet Tablets.

Authoritative literature describes the action of rennet enzyme on milk and the place of rennet-custards in the diets of convalescents, post-operative cases, invalids, infants, children, etc. There will be a display of "Junket" Brand Food Products.

LEDERLE LABORATORIES, INC.—Booth 22

Lederle Laboratories, Inc. will display all types of specific Antipneumococcic Sera as well as Sulfapyridine and Sodium Sulfapyridine, the comparatively new drugs used in the treatment of pneumonia.

We will also present our line of Globulin Modified Antitoxins and pharmaceutical specialties with particular reference to the high potency of Vitamin B Complex and the Bellabulgara Tablets which are receiving such wide spread acceptance in the treatment of Parkinsonism. All physicians are extended a cordial invitation to visit the Lederle booth.

J. B. LIPPINCOTT COMPANY—Booth 8

Among the interesting Lippincott publications on display will be Kugelmass': "Newer Nutrition in Pediatric Practice" and Becker and Obermayer's: "Modern Dermatology and Syphilology." Of similar importance is "Functional Disorders of the Foot" by Dickson and Diveley which has gone into a second printing within five months of publication. Other interesting works include Thorek's: "Modern Surgical Technic," Rigler's: "Outline of Roentgen Diagnosis," Barborka's: "Treatment by Diet" and many others.

A. E. MALLARD—Booth "B"

M & R DIETETIC LABORATORIES, INC.—Booth—36

M & R Dietetic Laboratories, Inc., Columbus, Ohio, will display Similac and powdered SofKurd.

Representatives will be glad to discuss the merits and suggested application of these products.

MEAD JOHNSON & COMPANY—Booth 42

Mead Johnson & Company will exhibit several new products in addition to Dextri-Maltose, Pablum and Oleum Percomorphum.

They will also have on display various examples of their slogan "SERVAMUS FIDEM"—We Are Keeping the Faith.

MEDICAL ARTS SUPPLY COMPANY LEPEL HIGH FREQUENCY LABORATORIES, INC.,—Booth 30

The merchandise we expect to display will consist of one set of physician's examining furniture; three pieces of Lepel High Frequency apparatus; an infra red lamp; an ultra violet lamp; assorted surgical instruments and specialties.

THE MEDICAL PROTECTIVE COMPANY—Booth 27

The Medical Protective Company's representative, thoroughly trained in Professional Liability underwriting, invites you to visit our exhibit booth. He is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship.

He will be glad to explain how his Company meets the exacting requirements of adequate liability protection, which are peculiar to the Professional Liability field.

MELLIN'S FOOD COMPANY—Booth 40

Members of the Illinois State Medical Society are cordially invited to call at our booth for an exchange of ideas and opinions relative to the feeding of infants and in regard to the preparation of nourishment for adults requiring a restricted diet, particularly in view of the recognized importance of selecting food material best adapted to the individual requirements.

THE MENNEN COMPANY—Booth 16

The Mennen Company will exhibit their two baby products —Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90% of the hospitals that are important in maternity work.

Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; also, for the lucky number prize drawing to be held at the close of the convention, for DeLuxe Fitted Leather Toilet Kits.

THE C. V. MOSBY COMPANY—Booth 37

Doctors attending the Illinois State Medical Society are cordially invited to visit the Mosby Booth—there to inspect the new publications which will be on display.

Outstanding new volumes on surgery, allergy, dermatology, operative orthopaedics, nervous and mental diseases, heart diseases, x-ray, gynecology and obstetrics, materia medica, and practice of medicine will be shown. Browse through this new material at the Mosby Booth.

A. MUELLER & COMPANY—Booth 7

PARKE, DAVIS & COMPANY—Booth 2

Featured in the Parke, Davis exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride preparations.

PET MILK SALES CORPORATION—Booths 48 and 49

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk booths.

PETROLAGAR LABORATORIES, INC.—Booth 4

This year the Petrolagar Laboratories, Inc., will offer, in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts.

Ask the Petrolagar representative to show you the new HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & COMPANY, LTD, INC.—Booth 15

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes.

Their representatives will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY—Booth 1

This publishing house will exhibit a great number of new books and new editions in addition to their many excellent works.

Among the more important new books and new editions that will be of particular interest to those attending the convention are Walters & Snell's "Diseases of the Gallbladder,"

the New (1940) Mayo Clinic Volume, Christopher's "Minor Surgery," Penn Riddle's "Injection Treatments," Buckstein's "Clinical Roentgenology of the Alimentary Tract," Levines "Clinical Heart Disease," Ewing's "Neoplastic Diseases," Wilder's "Clinical Diabetes Mellitus and Hyperinsulinism," Hauser's "Diseases of the Foot," McLester's "Diet and Nutrition," and many standard works such as Bickham's "Operative Surgery," Warbasse-Smyth's "Surgical Treatment," the Medical and Surgical Clinics of North America, and many others.

SCHERING CORPORATION—Booth 62

Schering Corporation's representatives will be pleased to discuss latest developments in hormone therapy.

New products on display will be Cortate (desoxycorticosterone acetate), Anteron (gonadotropic hormone from mares' serum), Pranturon (gonadotropic hormone from pregnancy urine), Pranone (orally effective progestin), as well as the other well-known Schering preparations—Progynon-B, Progynon-DH, Proluton, Oreton and Neo-Iopax.

OTTO SCHWEINBERGER & COMPANY—Booth 57

A free gift will be presented to each and every doctor visiting the Otto Schweinberger & Company Booth in celebration of their 15th anniversary.

They will feature the new Dual Wave Liehel-Flarsheim short wave diathermy, the Dual Spectrum ultra-violet lamp and portable X-Ray, and the new Portable Bovie surgical unit. There will also be on display a complete line of surgical instruments and laboratory equipment including the Spencer microscope.

SHARP & DOHME, INC.—Booth 50

Sharp and Dohme will have their new modern display at their booth this year, featuring Propadrine Hydrochloride Products, "Lyovac" Bee Venom Solution, and other "Lyovac" Biologicals.

There will also be on display a group of new pharmaceutical specialties and biologicals prepared by this house, such as Rabellon, Daldrin, Padrophyll, Elixir Propadrine Hydrochloride, Riona, Depropanex and Ribothiron.

Capable, well-informed representatives will be on hand to welcome physicians and furnish information on Sharp & Dohme products.

S. M. A. CORPORATION—Booth 3

Among the technical exhibits at the meeting of the Illinois State Medical Society this year, is an interesting new display, which represents the selection of infant feeding and vitamin products of the S. M. A. Corporation.

Physicians who visit this exhibit may obtain complete information, as well as samples, of S. M. A. Powder and the special milk preparations—Protein S. M. A. (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE & FRENCH LABORATORIES—Booth 9

Smith, Kline & French Laboratories, believing that many physicians dislike efforts to make them register, have arranged their booth for self-service.

Up-to-date information about "Benzedrine Inhaler," "Benzedrine Sulfate," "Benzedrine Solution," Pentnucleotide, Feosol Tablets and Elixir, Oxo-ate "B," Eskay's Neuro-Phosphates and "Paredrine Hydrobromide with Boric Acid Ophthalmic" may be obtained in convenient envelopes from literature dispensers.

If additional information and data is desired, the representative will be glad to answer any questions.

E. R. SQUIBB & SONS—Booth 47

Physicians attending the Illinois State Medical Society convention, are cordially invited to visit the Squibb Exhibit.

The complete line of Squibb Vitamin, Glandular, Arsenical and Biological Products and Specialties, as well as a number of interesting new items will be featured.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY—Booth 34

The Standard X-Ray Company wishes to extend to the doctors in attendance at the Centennial Meeting a most cordial invitation to visit their exhibit in Booth No. 34. Here you will find on display the very latest type of shockproof equipment that is suitable for installation in a doctor's office.

Items will be shown that are exclusive to Standard, and will incorporate many features that will not be found on other equipment. These many improvements are the result of over thirty years experience in the manufacture of x-ray equipment.

FREDERICK STEARNS & COMPANY—Booth 38

Doctors are cordially invited to visit our atractive convention booth to view and discuss outstanding contributions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will be pleased to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose (flakes and granules) for bulk and lubrication, Insulin-Stearns, Gastric Mucin, Trimax and Sulfanilamide tablets. A complete line of Vitamin products will also be displayed.

SUTLIFF AND CASE COMPANY, INC.—Booth 13

The physician who is served by SUTLIFF & CASE finds approximately 1000 medicinal products from which to choose his weapons to fight disease and death.

In addition to ethical pharmaceutical products, modern physicians' supplies and sundries are stocked for the convenience of physician and surgeon.

The SUTLIFF & CASE COMPANY possesses a splendid record of service to, and cooperation with, the medical progress; this record having been built on a solid foundation of 57 years of PROGRESS WITH THE PROFESSION.

WHITE LABORATORIES, INC—Booth 41

White's Cod Liver Oil Concentrate will be presented for your consideration. At our booth you may obtain complete information concerning the entire field of cod liver oil concentration, with clinical data substantiating the efficiency of White's Liquid, Tablet and Capsule Concentrates.

Qualified representatives and descriptive literature, including reprints and excerpts from medical literature, will further direct attention to the contribution of White Laboratories in the Vitamin A and D field.

JOHN WYETH & BROTHER, INC.—Booth 56

John Wyeth & Brother, Inc., Philadelphia, cordially invites visitors to their booth. Among the speciaties to he exhibited are:

AMPHOJEL—Wyeth's Alumina gel for the management of Peptic ulcer and hyperacidity.

ALULOTION—Ammoniated Mercury with Kaolin for the more rapid healing of Impetigo Contagiosa.

BERPON—Wyeth's Beef Liver with Iron.

BEWON ELIXIR—The palatable appetite stimulant and vehicle.

KAOMAGMA—Wyeth's magma of alumina and kaolin for the control of diarrhea.

MUCARA—For intestinal stasis and

SULFUR FOAM—For the external application of Sulfur.

X-RAY EQUIPMENT COMPANY—Booth 54

THE ZEMMER COMPANY, INC.—Booth 51

The Zemmer Company extends a cordial invitation to every member of the Illinois State Medical Society to visit their exhibit where they will display a number of their leading pharmaceutical products.

ANNIVERSARY OF SYPHILIS IN WHITE MEN

A State Health Department release says: October 12, 1939, marked the 447th anniversary of the discovery of the New World by Columbus and, according to competent observers, a few days thereafter will mark the 447th anniversary of the first infection of white men with syphilis. Convincing evidence is presented by students of the disease that syphilis was first acquired by white men (at least during modern historical times) when members of Columbus' crew were infected from the natives of Haiti after landing on the first voyage.

Be that as it may, syphilis undoubtedly first appeared in recognizable form in Europe after the return of Columbus. In 1495 it was carried by Spanish mercenaries to the Army of Charles VIII of France when that monarch laid seige to Naples and from his heterogeneous army syphilis spread quickly in a devastating epidemic throughout Europe. It followed the intrepid explorers of that historic period along trade routes so that within 10 years it had appeared in every nation of the world.

Thus syphilis is about 4½ centuries old, so far as white man is concerned. It required more than 400 of those years for man to discover the exact cause of syphilis and still longer to develop effective weapons to combat it. The great events which now make possible the eradication of syphilis were as follows:

1. In 1905 Fritz Schaudinn discovered and proved that syphilis is caused by a living organism, a spirochete called Tre panema, pallida. This opened the way, only 34 years ago, for direct attack on the cause of the disease.

2. In 1906 Wassermann discovered the practicability and proved the reliability of testing blood to show whether or not an individual is infected, making possible the detection of practically all cases of syphilis.

3. In 1911, Erlich succeeded in preparing a drug, the famous 606, which will cure syphilis in the great majority of cases if used intelligently and soon enough.

These scientific discoveries, the details of which have been greatly improved, give man the upper hand against syphilis for the first time in a conflict that has raged for upwards of 400 years. On the anniversary of the beginning of that conflict, Illinois has more reported cases of syphilis than of any other notifiable disease (22,193 for the first nine months of 1939), but has organized the machinery and is prepared to go forward with an extensive and intensive offensive against the disease. Drugs are free for the treatment of any patient and blood specimens will be examined free, although doctors charge for their services in connection with both procedures. Literature about the disease is available free and motion pictures can be borrowed from the State Department of Public Health. Ten clinics supported by the State in various localities offer free treatment and examination of the poor, and experienced personnel are constantly at work to uncover cases and keep patients under treatment.

It is possible that within a decade or so Columbus Day might be celebrated as the anniversary of the triumph over a four centuries old enemy.

ANSWER YES OR NO

Now, Doctor, assuming that you are an American citizen, a resident taxpayer, and assuming that you are the legal possessor of a license to practice medicine and surgery, having duly completed the requirements of special education and training as prescribed by law, and assuming further that you have successfully passed the qualifying examinations required by the State of New York except in certain cases of foreigners desiring to practice here, and assuming further your legal right so to practice medicine and surgery except in Workmen's Compensation cases without further qualification, and assuming further that having duly made application in conformity with the revised Workmen's Compensation Act, and having been certified as to training and ability, character, morals, ethics and lack of convictions by the Commissioner of Labor, classified, symbolized and numbered, and assuming further that you are a member in good standing of your National, State and County medical societies, that you have duly completed your annual physicians' registration and payment of fees to the State, that you have duly paid the annual fee and fulfilled the registration requirements of the Harrison Narcotic Act, and assuming that you are familiar with all the Federal and State statutes governing the practice of medicine and surgery in your locality, and assuming that, having complied with all the local rules and regulations you are admitted to the privileges of your local hospital, and have fully paid your Staff dues and assessments, and assuming further that you have contributed to the benefit for the Nurses' Home, the Hospital Fund, the Policemen's Ball, and the Boy Scouts, and assuming further that the local Welfare Office uses you and the facilities of your private office only for an occasional emergency case at ridiculous rates, which cannot be sent (for some reason or other) to a free clinic, and assuming in addition that the school nurses send the children of your private patients to the free clinics, and that your former private patients now go to the Medical Centers because of the subsidized facilities, and assuming additionally that in spite of the free-choice-of-physician privilege under the revised Workmen's Compensation Act, the injured employees of your local industries do not choose for some reason to be treated by local and properly qualified physicians, although during periods of lay-off they have no reluctance in availing themselves of local welfare and local medical service in the clinics, and assuming also that you are aware of these conditions, would you be prepared to state whether, in your opinion, the present practice of medicine and surgery in the State of New York is cockeyed or not?—Lawrance D. Redway, M. D., in the *Westchester Medical Bulletin.*

SHAKESPEARE?

"Sign over a counter full of cheeses in a Chicago store: 'What Foods These Morsels Be!'"

Original Articles

SPONTANEOUS HEMORRHAGE AND THE METEOROLOGICAL ENVIRONMENT

William F. Petersen, M. D.

CHICAGO

In a recent number of the Illinois Medical Journal, Herndon has reported a series of six cases of "Spontaneous Subarachnoid Hemorrhage."[1] The term "spontaneous" is in many ways a misnomer because it must be obvious that every clinical episode of this character is to be related to some antecedent causal event. After all, clinical events—whether finding expression in changing symptomatology, in changing chemical or serological reaction, in changing nervous or mental state, in recovery or death—are energy effects, and we might logically seek an expanation of some of the more common "spontaneous" events in environmental alterations that might require undue autonomic adjustment.

In the region of the world which we inhabit, the major factor to which the human must adjust is the meteorological environment. It is the constant pendulation of the air mass from hot to cold and from cold to hot that causes greatest strain, because this necessitates a continual shifting of the blood mass from the periphery to the splanchnic region and from the splanchnic region to the periphery. Under the circumstances it might seem logical to seek the cause of "spontaneous" clinical episodes of the type that Herndon has reported in relatively simple weather changes. To illustrate this I have prepared small meteorograms to show the relation of the meteorological events to the clinical events delineated in the paper.

The first case concerned a woman, 47 years of age, who was disturbed early in the morning on August 9, 1931, by a noisy neighborhood party. Shortly after she complained of a terrible pain in the head and the neck and later vomited several times. A tentative diagnosis of epilepsy was made. In the afternoon of the following day she was drowsy, her blood pressure was 155/85 and she became worse on the 10th of the month but made a final recovery.

The meteorograms which have been prepared to illustrate these events simply show in the black field the maximal and minimal temperatures of the day, the lower curve indicates barometric pressure and at the date line the small black columns indicate precipitation.

When we examine the date indicated for the first case we note that the onset occurred with the beginning of a sharp change in temperature,[1] from a maximum of 100° F., until finally a minimum temperature of 55° F., was reached.

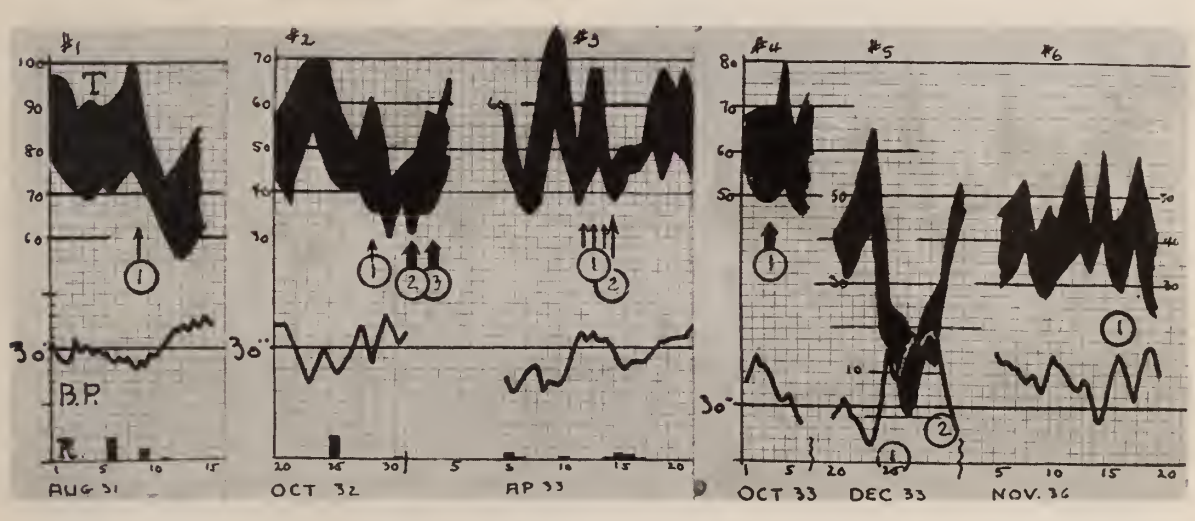


Figure 1. Meteorogram to Illustrate the Clinical Events in Dr. Herndon's Cases 1—6. The black field represents the daily maximum and minimum temperatures in Fahrenheit; the lower curve, the barometric pressure in inches; and the black columns over the date line, the precipitation. The circled numbers with arrows illustrate the onset of the clinical events described in the text.

The second case concerned a young girl who had bumped her head slightly on the night of October 28, 1932. This was immediately followed by a headache, nausea, vomiting, faintness and unconsciousness. She was admitted to the hospital on the 1st of November and on the 3rd of November her condition had not yet

From the Department of Pathology, Bacteriology and Public Health, University of Illinois College of Medicine, Chicago, Illinois.

improved; the urine contained glucose, acetone and diacetic acid. She ultimately made a complete recovery.

When we now examine the meteorogram for this period we note that the onset[1] occurred with the passage of a polar air mass (barometric pressure had commenced to increase, temperatures were beginning to fall). Hospital admission[2] occurred with lowest temperature. As an after-effect of the presumptive period of vascular spasm here involved, with its associated anoxia, the appearance of sugar, acetone and diacetic acid in the urine is recorded at.[3]

The third case concerned a syphilitic patient who was first seen on April 15, 1933, with a history that he had a severe headache for the three preceding days.

Again we note from the meteorogram that the onset of the headache[1] occurred with an unusually steep decline in temperature from the 80's to a minimum of 40 and the patient was finally observed by the physician[2] with the crest of the succeeding polar event. When we examine the meteorogram we note that the entire clinical episode occurred during a period of higher barometric pressure.

Case 4 concerned a miner, 43 years of age, who experienced sudden pain in both ears and became dizzy and vomited after blowing his nose very hard on the 3rd of October, 1933. Obviously this procedure would involve an increase in blood pressure, but this particular increase in blood pressure must have occurred at a time when the basal levels of the blood pressure were already high, because examination of the meterorogram reveals the fact that on the 2nd of the month the barometric pressure had been unusually high. In other words, it would appear that we are dealing with a summation of two events that will be of significance in bringing about an unusual physiological situation.

Case 5 concerned an obese American housewife, who developed a severe headache on December 26, 1933, at which time she was unconscious for 15 minutes. She made some improvement but on the 30th of the month was again disturbed.

Here we note from the meteorogram that the development of the entire episode occurred with a severe cold wave, which reached zero Fahrenheit on the 26th of the month, at which time her headache was most severe. The accentuation of headache with the crest of the succeeding barometric episode on the 30th would represent an accentuation of the original physiological maladjustment. Note the associated crests of barometric pressure at the time.

Case 6 concerned a man who was found unconscious on the floor of his office on November 16, 1936. He was roused, vomited and complained of severe occipital headache.

An examination of the meteorogram indicates the occurrence of the episode with a polar crest, temperatures having declined sharply and barometric pressure being high.

SUBDURAL HEMATOMA IN INFANCY AND CHILDHOOD

Lest it be thought that these observations are not typical, I turn to a report on "Subdural Hematoma in Infancy and Childhood" by Drs. Ingraham and Heyl.

Their first case does not present dated episodes, but the *second* case concerned a boy, nine weeks of age, who was admitted on September 30,[2] 1937, because of vomiting, which began ten days previously.[1]

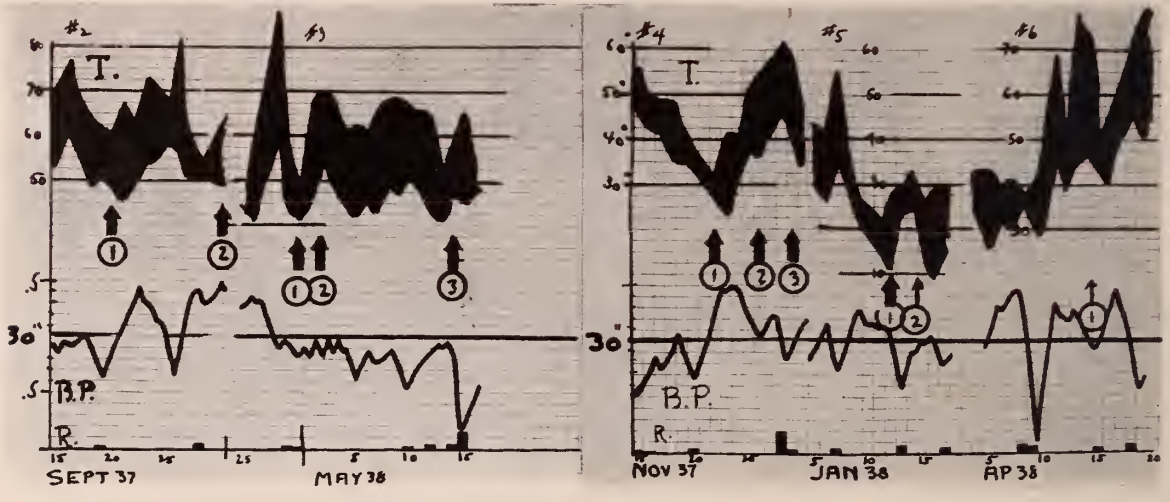


Figure 2. Meteorogram to Illustrate the Clinical Events in Cases Nos. 2, 3, 4, 5 and 6 of Drs. Ingraham and Heyl.

When we examine the meteorogram we note that the vomiting began with a polar front and the boy was admitted at the crest of the succeeding cold wave.

In the third case the record was that of a Negro girl, three months of age, who was admitted on May 14th[3] with a history of vomiting of two weeks' duration.[1] Twelve days before[2] entry she had generalized convulsions.

When we examine these episodes we note that the illness began with the sudden turndown of temperature

from high levels (90° F.) to a low of approximately 40° F. The patient finally was admitted at a subsequent polar episode when a sharp turndown in temperature had occurred and with marked precipitation.

In Case 4 the record concerned a boy, eight months of age, who was admitted on November 29, 1937.[3] because of drowsiness and convulsions during the past week.[1] Three days[2] before admission internal strabismus had appeared.

When we examine the meteorogram we note that the entire episode is associated with a sharp fall in environmental temperature, the strabismus occurred with the succeeding polar front and the child is finally admitted with the next succeeding event with temperatures turndown from a high of 60° F.

Case 5 concerned a girl, nine months of age, who was admitted on January 14, 1938, because of twitching of the right arm of one hour's duration. She had fallen on January 12th[1] from a high chair to the floor bruising her right cheek and was restless during the night. Here we are obviously dealing with trauma as an associated factor, although we must consider the possibility that the accident itself was associated with a preceding illness because the child had bronchitis and otitis media with a temperature of 104° F. on the following day.

An examination of the meteorogram would indicate that the entire episode is also associated with a sharp fall in environmental temperature and the final episode[2] indicating localization, with twitching of the right arm and leg, occurred with the onset of the passage of a cold air mass.

Case 6 concerned a girl, four months of age, who was admitted on April 14, 1938, with a diagnosis of fever and convulsions of four hours' duration.[1]

Examination of the meteorogram of the time indicates the onset with a sharp turndown from high temperatures on the 13th, the episode occurring definitely with the onset of a polar front.

Case 7 concerned a boy, two months of age, who was admitted on October 10, 1937,[2] with a history of convulsions for the past three days.[1]

Note from the meteorogram that the convulsions began with the passage of a polar front and apparently were accentuated with the continued passage of the cold air mass.

In Case 8 the history concerned a boy, three months of age, who was admitted on March 14,[2] 1938, because of cyanotic spells and twitching of the right side for eight hours. One week before the onset[1] he was hit on the glabella with a bottle, without any immediate symptoms appearing.

Examination of the meteorogram indicates that trauma occurred at the crest of a barometric episode and the onset of the acute symptomatology is to be associated with a period when a cold air mass began to pass after the warm temperatures of the 13th and 14th. The barometric pressure had increased from the evening of the 13th.

Case 9 concerned a boy, 13 months of age, who was admitted on May 17, 1938[3] with a history of vomiting and apathy of seven days' duration.[1] He had fallen from a high chair to the floor three weeks before admission but at that time there was no clinical disturbances. Three days before admission[2] an internal strabismus had been noted.

Examination of the meteorogram would indicate the onset of the acute disturbance with the transition from high to lower temperatures and from low barometric pressure to high. The internal strabismus followed with the passage of the tropical front and hospitalization followed with the barometric crest.

Case 10 concerned a boy, three years of age, who was admitted on February 15, 1938 because of deafness of one month's duration. He had some trauma from infection in August, 1937. On the day of admission he had suddenly vomited three times[1]. The pulse rate was high (110).

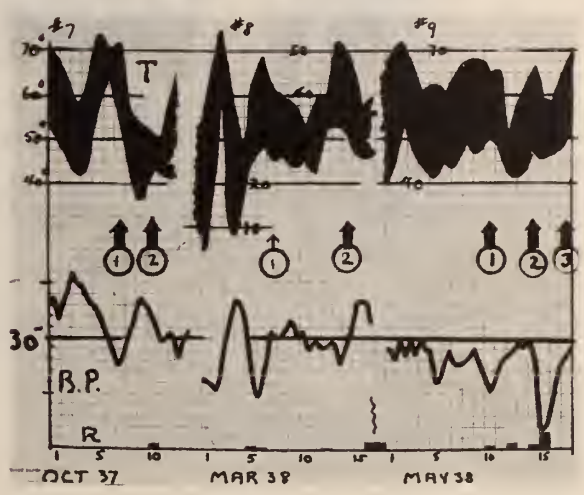


Figure 3. Meteorogram to Illustrate the Clinical Events in Cases Nos. 7, 8, and 9 of Drs. Ingraham and Heyl.

Examination of the meteorogram indicates the acute onset with the passage of a polar front.

Case 11 concerned a boy, 6½ years of age, who was admitted on June 17, 1937[2] because of headache of one month's duration. At that time he had fallen from a wagon and hit his head on the pavement. Eleven days before entry[1] vomiting and expistaxis began and have occurred since that time.

Examination of the meteorogram would indicate the onset occurring in the wake of a severe fall in temperatures early in June. The exact dating of episode[1] occurs with a secondary barometric crest after this major event. Actual admission to the hospital occurs with the next succeeding major barometric crest.

The case histories here selected merely indicate the significance of such relatively simple environmental alterations in the precipitation of clinical events such as hemorrhages here detailed. I should like to point out that all patho-physiological alterations which underlie changing symptomatology are conditioned by the meteorological environment in which the patient exists.

The integration is, however, not always the simple and direct one here in evidence.

With the passage of cold air mass the peripheral vascular bed is constricted, blood pressure rises, sugar is mobilized from the liver, a relative "sympathicotonia" obtains and under such circumstances vessels that are defective for any reason, such as preceding damage by arterio-

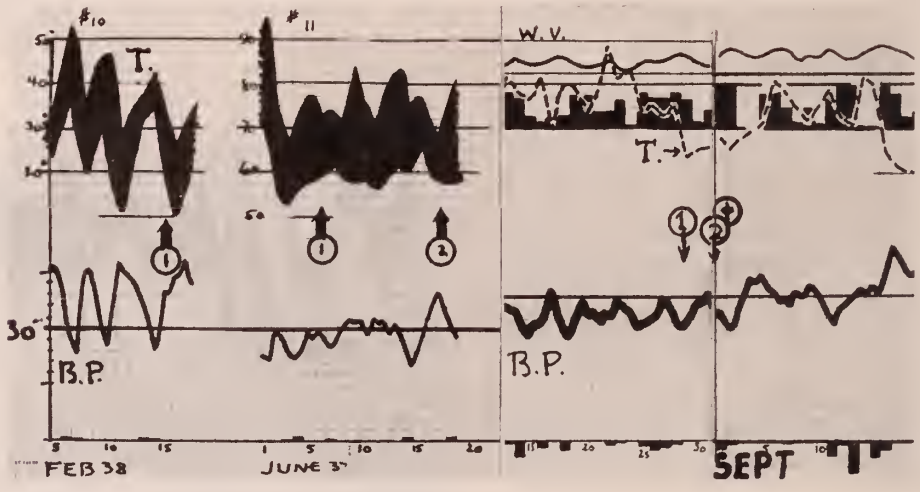


Figure 4. Meteorogram to Illustrate the Clinical Events in Cases Nos. 10 and 11 of Drs. Ingraham and Heyl.

Figure 5. Meteorogram to Illustrate the Clinical Events in Dr. Underhill's case of mesenteric vascular occlusion. The upper curve represents the wind velocity; the dotted line, the mean temperature; and the upper black field, the degree of cloudiness.

sclerosis, by trauma, by infection, are apt to rupture.

The phase of vascular constriction induced by any environmental cause is in turn followed by a phase when vascular beds are dilated, when vessel walls are sticky and adhesive, when the blood current is sluggish, when the trend to thrombosis is enhanced. Thrombosis therefore is not infrequently to be related to a preceding meteorological event; undue strain is put on the vascular system. We have merely to turn to another case report from a recent number of the ILLINOIS MEDICAL JOURNAL to illustrate the interrelation:

MESENTERIC VASCULAR OCCLUSION

Underhill has described a complete occlusion of the superior mesenteric artery with involvement of practically the entire small intestine in a patient, with the following history:

The patient was a white woman who had enjoyed good health until 7 o'clock in the morning of August 29, 1936[1] when she was awakened with a dull pain in the abdomen; some relief was obtained by a bowel movement, but at 8 A. M., the patient suffered severe epigastric pain, with nausea and vomiting.

Physical examination revealed an obese adult female who weighed 245 pounds. The temperature was 97° F., she was conscious, restless, complaining of excruciating pain in the abdomen. She entered the hospital immediately. On the morning of the third day the patient was improved. In the evening, however, at 9 P. M., the patient's pain again increased markedly and vomiting began[2]. At 8 P. M., of the fourth day an operation was carried out revealing a gangrenous small intestine from the beginning of the jejunum to within 15 cm. of the ileocecal valve. The patient regained consciousness and died the following morning at 7 o'clock.

In the meteorogram TF No. 5 is used to illustrate this episode the daily mean temperatures are indicated by the dotted lines, the wind velocity by the upper curve, the relative amount of cloudiness by the black columns.

When we examine this meteorogram, we note that the onset of the disturbance occurred at the end of a rather prolonged period of increasing cold, temperatures that had originally been in the 90's on the 22nd of August had declined to the sixties. With this phase of declining temperatures blood pressures would have been high. This would be followed by a characteristic decline in blood pressure and a trend toward thrombosis that would be associated with the phase of metabolic stimulation, relative acidosis, etc., normally following in the wake of the pressor episode. It is in this phase that the thrombus here involved must have formed. Then came a secondary increase in blood pressure, the change in vascular tone resulted in detachment, and embolism followed.

I have selected these few case records merely to illustrate the concept that the use of the term "spontaneous" is hardly justifiable until we have investigated more thoroughly some of the many environmental factors to which the human organism must adjust.

The normal individual has little difficulty in adjusting to the meteorological alterations to which we are subjected, but in the old and the young, in the damaged individual, or in the individual who, because of unusual liability of the autonomic nervous system, becomes unusually susceptible to meteorological changes, we must constantly refer back to the possibility that the clinical episodes which we witness may find their explanation in atmospheric alterations. The seat of the clinical disturbance may be observed in any tissue or any organ and the clinical expression may take the form of any type of dysfunction—whether hemorrhage or thrombosis, a diabetic coma, the sudden onset of an acute leukemia, or the sudden change in the mood of the psychotic patient.

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DISSOCIATED GENITALIA IN AN INGUINAL HERNIA: WITH DEFECT OF ONE TUBE AND OVARY

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The majority of authors agree that herniae of the female genitalia through the inguinal canal are usually unexpected in the adult, although more frequent and quite easily diagnosed in the child. Hewitt[1] in 1923 reviewed the 410 cases which had been presented up to that time and, in addition, presented one of his own, making a total of 411 cases. Sarnoff[2] in 1928 presented a case of prolapse of the uterus and tubes through a right inguinal hernia. In presenting his case Sarnoff stated "the condition of prolapse of the uterus to the right inguinal hernia is termed right inguinal hysterocele. Together with the prolapse of the tubes it might be termed right inguinal salpingohysterocele, a condition which is indeed very rare and interesting."

Forbes[3] in 1933 reviewed a number of cases of "ovarian anomalies:" congenital absence of one or more of the female genitalia; occurrence of a third ovary; and malformations of these and other organs. Comprehensive reference lists, given in the papers by Hewitt and Forbes, include no record of an anomaly to the extent found in the case considered in this paper: absence of right tube and ovary; prolapse of the left tube and ovary and infantile uterus through a right inguinal hernia; left ovary occurring between the tube and uterus with no apparent connection between the uterus and any pelvic organ.

CASE REPORT

The patient (K.V.) was first seen as a surgical case by one of the authors (H.P.S.) when her hernia became so painful that she was unable to carry on her duties in the home. Her previous medical history included whooping cough, measles, chickenpox and attacks of tonsillitis. The patient stated she was always strong and large for her age and had consulted a doctor for amenorrhea at the age of 16 but was told she would menstruate later. Patient claimed that although she has never menstruated, breast development started at the age of 11 and that since that time she has had all the symptoms of menstruation but no flow. Second-born in a family of twelve children, married at the age of 19, K. V. feels she has always had a normal libidinal response. No abnormalities were found in the family history.

Following tonsillectomy in 1930 the patient had influenza and secondary cystitis, albumen in her urine and considerable kidney trouble up to the time of examination. During this period she saw several different doctors at times when she was subject to periods of upset stomach and vomiting. Patient relates these occurrences with her hernia "coming out."

In 1936 K. V. entered the hospital in a uremic coma complicated with lobar pneumonia. Blood analysis showed, per 100 cc.: blood sugar, 110 mg.; non-protein nitrogen, 187 mg.; urea nitrogen, 84 mg.; creatinine, 15 mg.; uric acid, 18 mg. The urine was cloudy, straw colored, with acid reaction; specific gravity, 1,005 (average for a series of specimens); albumen ranged from two to four plus; sugar negative; acetone and diacetic acid were both three plus; bile negative. Microscopic examination: urine loaded with pus, many bacteria and few blood cells; methylene blue stained smear from centrifuged specimen of catheterized urine showed many clumpings of colon bacilli, four plus pus, epithelial cells and numerous red blood cells.

Cystoscopic examination (H.W.W.) after uremic coma and pneumonia had been controlled showed evidence of marked cystitis with several areas of ulceration. No residual urine, tumors or stones were seen. Capacity was slightly decreased. The urethra showed evidence of edema and thickening at internal orifices and

evidence of slight urethritis. Mucosa of bladder was markedly congested, edematous and ulcerations were present, especially at the region of the dilated and congested left orifice. The ureters were catheterized and no obstruction met. Retrograde pyclograms of both kidneys made on March 19, 1936 showed a large kidney shadow with pyelectasis (about grade 2) and a blunting of the calices together with a ureterectasis (about grade 2) in its entire length with a marked narrowing at the orifice. There were a few pus and blood cells in specimen obtained from both right and left kidneys. Kidney function test (intravenous injection of indigo-carmine) showed traces of the dye in 40 minutes from both right and left side.

After several weeks in the hospital the patient seemed improved and had no other complaints than weakness and fatigue with some constipation. She was allowed to return to her home under the care of her family physician who reported frequent flare-ups of her cystitis and complaints of backache.[1] She had frequent colds and, at times, conditions that were termed "flu," after which her urinary disturbance was more marked. She was up and about most of the time but unable to carry on the usual duties of a farm housewife. She adhered to a very restricted protein diet but had no unusual loss of weight and no other general physical disabilities.

In March, 1937, patient returned to the hospital with symptoms of recurrent pyelitis, following a bilateral otitis media. At this time catheterized specimen of urine showed two plus albumen and pus cell count of 75 per high power field, moderate number of bacteria of bacillus and coccus types, occasional epithelial and a few red blood cells. The blood contained 187 mg. non-protein nitrogen per 100 cc. of blood. Methylene blue stained smear of urine showed clumps of colon bacilli, short chains of streptococci and many pus cells. Cystoscopic examination produced evidence of chronic cystitis with a few areas of ulceration. Right and left ureteral orifices were dilated with some edema. The ureters were catheterized and urine obtained from right and left kidneys contained many pus cells and showed evidence of a mixed infection with colon bacillus predominating. Faint traces of indigo-carmine given intravenously were returned after twenty minutes. The pelves of the kidneys were lavaged and after several intermittent repetitions of this procedure the patient was discharged from the hospital improved.

Physical examination January 3, 1938 showed a rather large strong woman, well nourished but slightly obese, aged 31 years, intelligence apparently normal, height five feet two inches and weight 158 pounds. The configuration of the body and distribution of pubic hair were normal for a female. Negative findings were found upon examination of eyes, ears, nose and throat, breasts, chest and heart. Speculum examination showed vulva and vagina normal but no hymen was distinguishable nor was any uterine or abdominal opening into the vagina found. On bimanual examination the uterus could not be palpated but a right direct inguinal hernia, the size of a silver dollar, with large sac, contained abdominal contents which could easily be replaced in the abdomen. Blood pressure was 136/80; pulse 84. Thyroid was normal. Gastro-intestinal findings were negative except for history of nausea and vomiting when hernia was out. Her reflexes were within the usual range. Wassermann was negative and total and differential blood counts were normal.

On January 4, 1938, patient entered the hospital and was again cystoscoped, preliminary to herniotomy. This examination showed some evidence of urethritis, less cystitis than formerly and a few remaining areas of ulceration, especially about the left orifice. The ureters were explored without obstruction and the urine samples from both right and left kidneys contained moderate amounts of pus with evidence of a mixed infection present, with the staphylococcus predominating. Traces of intravenous indigo-carmine were returned from both kidneys after twenty-two minutes. The blood contained 48 mg. non-protein nitrogen per 100 cc. The diagnosis at this time was a congenital chronic pyohydro-nephrosis with chronic cystitis. On January 7, 1938, she was again cystoscoped, without the insertion of the catheters, to recheck the kidney function by observing the appearance of the dye at the orifices Traces of the 10 cc. of indigo-carmine given intravenously appeared after twenty minutes.

Patient was operated upon January 14, 1938 under gas-induction anesthesia. Standard Bassini incision was made down to the sac. The lower edge of the sac was found attached to the uterus and upon raising the peritoneum outside of the abdomen, the uterus, left tube and ovary were easily brought through the opening. The uterus was infantile, firm, about the diameter of an index finger, approximately one inch in length and adjoined a very elongated, apparently normal left ovary (fig. 1). Distal to the ovary a normal appearing left tube was found. No direct connection could be seen between the tube and uterus. No open connection could be found between the utrus and vagina and any other organs within the pelvis. The round ligaments were attenuated and hard to distinguish. The appendix was protruded through the hernial opening and removed. The uterus was then removed in order to facilitate resection of the sac. Except for the abnormality of posi-



Figure 1. Operative field showing relationship between positions of: (A) Left ovary; (B) Left tube; (C) Appendix; (D) Uterus.

tion the ovary and tube were apparently normal and were replaced in the abdomen. The hernia was repaired and the abdomen closed according to the standard Bassini technique. The patient remained in the hospital for twenty days with no postoperative complications. During this time patient felt greatly relieved; her discomfort and nausea disappeared. After her return home patient continued through a normal convalescence.

July 28, 1938, the patients blood pressure was 132/78; pulse 80; physical examination negative. The Pfannenstiel scar was a small white line, freely movable, and there was no pain or tenderness. The patient, (K. V.), stated that she was delighted with her results, that she no longer had any nausea or vomiting, and could work and have coitus without any pain although she was bothered occasionally by recurrences of her kidney condition. On February 23, 1939, the patient's blood pressure remained unchanged and her only complaint was that she occasionally had trouble with her kidneys; otherwise, she felt completely relieved of all other symptoms. Urine specimen contained a trace of albumen, many pus cells, and many bacilli in a stained smear. Complete blood examination was negative. Patient was put on mandellic acid.

In April, 1939, cystoscopic examination showed a moderate urethritis with some constriction of the orifice of the bladder and a moderately severe chronic cystitis with some edema of the mucous membrane. Some decrease in the capacity of the bladder was noted. However, there were no stones or ulcerations present and no diverticuli were seen. It was necessary to give the patient intravenous indigo-carmine in order to locate definitely the orifices of the ureters. The dye showed faintly after 50 minutes and by watching the points of excretion the orifices were located but, due to their constriction, a number 5, olive-tipped ureteral catheter could not be inserted, making it impossible to obtain a retrograde pyelogram. Intravenous pyelogram was procured, using 30 cc. of diodrast. Pictures were taken at the end of 20, 35 and 55 minutes. In the latter there could be distinguished very faint shadows of the pelves of the kidneys. None of the pictures taken at 20-minute intervals for the next two and one-half hours showed any definite outline of the pelves or the ureters, probably due to slow excretion of the dye. Catheterized specimen was cloudy, straw color and alkaline, having a specific gravity of 1,014, and containing a trace of albumen but no sugar. There were many leukocytes and lymphocytes present but no evidence of tubercular organisms.

The blood findings upon a morning fasting sample were: hemoglobin, 75 per cent.; red blood count, 4,990,000; white blood count, 8,850; polymorphonuclears, 69 per cent.; large mononuclears, 2 per cent; small mononuclears, 26 per cent.; eosinophiles, 2 per cent. Each 100 cc. of blood contained: sugar, 83 mg.; non-protein nitrogen, 28 mg.; urea nitrogen, 11.2 mg.; creatinine, 1.1 mg.

DISCUSSION

This patient provides us with an instance of a more extensive anomaly of the female urogenital system than has previously been reported. The abnormality of her female genitalia is unquestionably congenital. It certainly would seem that, due to the close relationship in embryological development of the urogenital system to the mesoderm and entoderm, the kidney involvement must have also had a congenital background. The absence of the right tube and ovary, together with the history of recurrent kidney dysfunction, indicate an incipiency occurring early in embryonic development.

Wharton[4] called attention to the fact that: "In making a clinical study of a case of congenital abnormality of the uterus, one must bear in mind that the genito-urinary organs have a common origin, and in their development are inseparably associated. Such malformations must, therefore, be studied from the viewpoint of the genito-urinary system as a whole." Environment, type of work, marital situation, etc., could, therefore, have had very little primary effect in this case. Had this patient been operated upon early in childhood she would have been spared a great deal of discomfort, but it is doubtful whether it would have influenced in any way the prognosis consequent to the kidney condition. Unquestionably, had this patient's financial circumstances been better, her tonsils would have been removed earlier, thereby eliminating any effect from this source upon her kidney condition. The hernia could have been diagnosed and repaired during childhood and before puberty, at which time it is quite certain that the hernia did not contain any of the genitalia.

The chronic pyohydronephrosis and contraction of the kidneys, causing lowered kidney function, is of long standing and the bladder condition, a chronic cystitis, is no doubt secondary to the kidney infection. The prognosis in this case is rather poor because as long as the infection exists the function of the kidneys will continue to decrease; therefore, any time following some general systemic infection or other disturbance she may have an anuria with a secondary uremia, as she has had several times in the past.

This condition seems, primarily, a congenital condition secondary to a congenital obstruction of the orifices of the ureters combined with a congenital condition at the orifice of the bladder. These congenital conditions at the orifices appear to have produced an obstruction, with back pressure, making the patient more susceptible to an

infection which was incurred early in life and has existed until the present time. Neither the medical history nor the laboratory and clinical findings have evidenced any marked hematuria. The bladder symptoms have not been sufficiently pronounced to indicate the presence of any tubercular condition in the upper urinary tract. If the hernia had been repaired before puberty and the case studied urologically some of these congenital conditions might have been corrected: the secondary infection with lowered kidney function might have been prevented and the patient been enabled to lead a normal life.

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This patient was referred to the authors by Bernice Curry McConnell, M.D., LeRoy, Illinois.

ELECTROCARDIOGRAPHY AND CLINICAL PRACTICE

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CHICAGO

The usual study of the heart includes a thorough history and physical examination of the patient, electrocardiographic record or records, x-ray findings of the heart and great vessels and routine Wassermann, complete blood count, and urine analysis. Fluoroscopy may be necessary in certain cases, for example, to determine the presence or absence of an aneurysm or to study the posterior surface of the heart, and many other tests, when indicated, are of value. Electrocardiography has become an integral part of the determination of functional disturbances of the heart, namely, the numerous arrhythmias, neural blocks, and conduction abnormalities.

At times a series of electrocardiograms are exceedingly helpful and may give valuable information which otherwise may not have been obtained from a single record. This is especially true in the differentiation between coronary sclerosis with angina pectoris and an atypical coronary accident, be it thrombosis, occlusion or embolus. It also may serve to differentiate between an active progressive cardiac lesion and a quiescent one.

Another recent addition[1] to the aid of electrocardiographic interpretation is the comparison of electrocardiograms before and after exercise. Latent conduction abnormalities, such as wandering of the origin of the pacemaker, occurrence of interauricular conduction disturbances, partial retardation of the conduction between auricle and ventricle, frequent appearances of extrasystoles and signs of myocardial involvement, have been brought out by this method. This is especially true of old rheumatic and diphtheric hearts.

An electrocardiogram is the record of electrical phenomena which occur primarily in the specialized tissue of the heart. However, skeletal muscular contractions, although sometimes present as artefacts, are not interpreted in an electrocardiogram. It is true that neural and muscular tissues are intimately intermingled and that, as a rule, damage to one system is associated with damage to the other. Nevertheless,

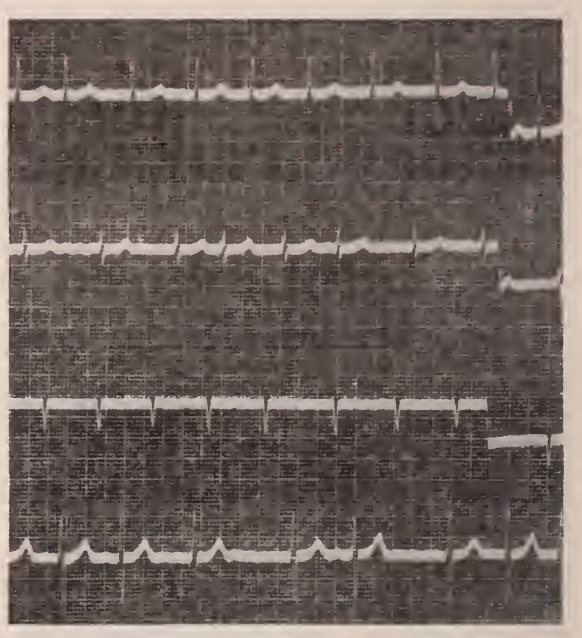


Figure 1. Case of Mr. E. P. W. Age 56 years. Auricular fibrillation of thirteen years duration. Left axis deviation. No other conduction abnormality.

the proportion of damage of the neural system on the one hand and the damage to the muscular system on the other is in many cases not balanced, sometimes markedy unbalanced. Valvular disease, if uncomplicated by muscular damages,

may show few or no electrocardiographic changes.

Since we interpret the neural changes when examining an electrocardiogram, it is rational to speak of different degrees of conduction abnormality rather than the often misleading terms of myocardial damage or myocardial degeneration.

The prognosis as to the heart itself depends primarily on the character of the myocardium, the strain which will be placed upon it, and the likelihood of future disorders of its makeup (vascular, muscular, valvular and neural). Therefore, the prognosis of a given individual which depends upon an electrocardiogram alone is inaccurate and many times in error.

There is found below a simple chart concerning several facts which are and should be of the utmost importance to any doctor who interprets electrocardiograms. This information should come from the physician requesting the electrocardiogram and be copied into each electrocardiographic record in a space for that purpose.

1. Age.
2. Height.
3. Weight.
4. Examination.
   A. Routine.
   B. Heart disease. Duration.
5. Amount of digitalis or other cardiac medication in the past three days.
6. Size of the heart.
   A. Normal.
   B. Slightly enlarged.
   C. Moderately enlarged.
   D. Markedly enlarged.
7. Blood pressure. Systolic. Diastolic.
8. Physician's diagnosis.
9. Physician's problem.

At the present time the individual's age usually is placed routinely on each record. Different standards or normals are found in different age groups, and disturbances which may be present in old age and be characterized as slight, may be characterized as moderate or severe in a young individual. Then, of course, certain disorders and diseases of the heart tend to fall into certain age groups; generally speaking, the congenital and rheumatic groups are usually found in children and young adults; the syphilitic, the hyperthyroid, and the malignant hypertensive groups are usually found in the middle aged in-

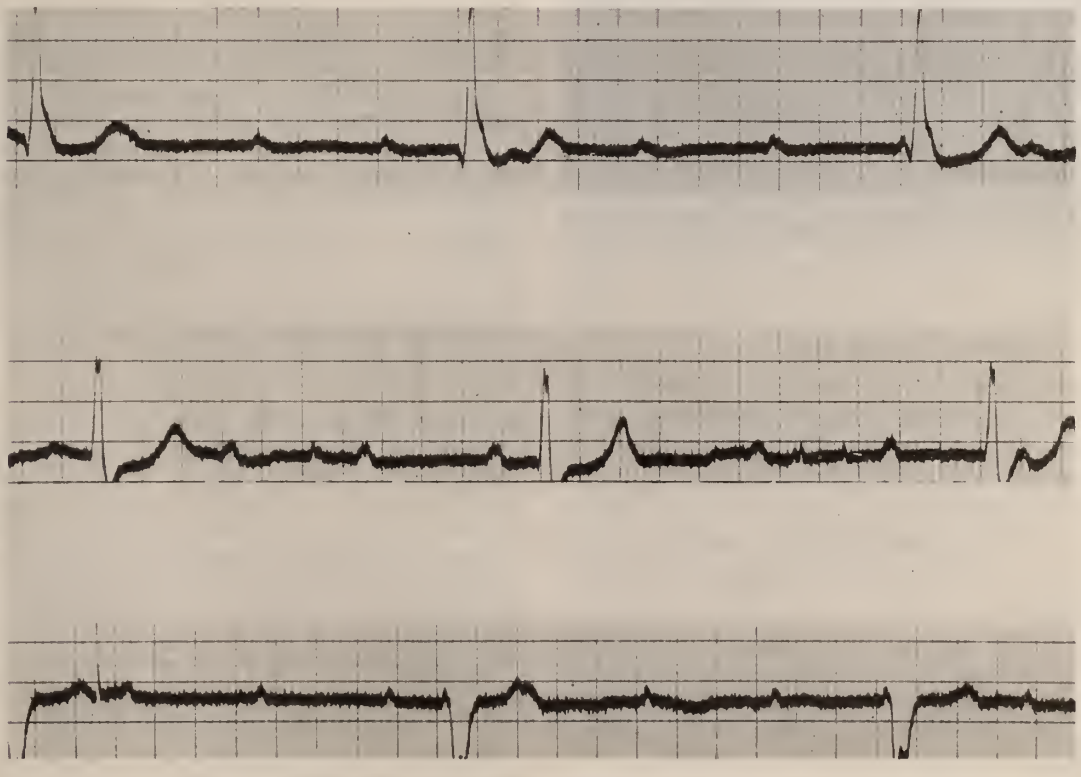


Figure 2. Case 2. Mr. F. L. Age 62 years. Complete heart block of six years duration. A typical left bundle branch block.

dividuals, and the arteriselerotic group with and without hypertension is found in the older group.

Height and weight are of value in the interpretation of normal and abnormal axis deviation. Short heavy people commonly show left axis deviation of slight or even moderate degree normally, whereas tall thin people may give slight right axis deviation normally.

Whether the electrocardiogram is routine or due to suspected or clinical heart disease is important, although great care must be used in interpretation in either case. The duration of the heart disease may guide us in correlating the electrocardiographic and clinical findings.

Cardiac medication is commonly added routinely to many electrocardiographic records; the

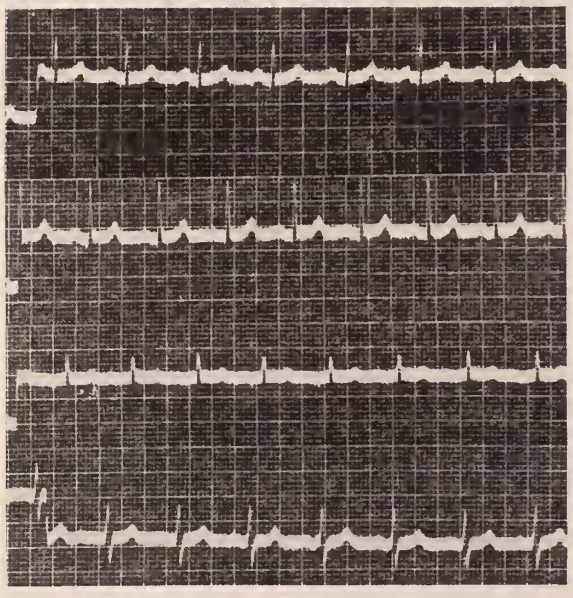


Figure 3. Case of Mr. R. W. Age 24 years. Normal electrocardiogram in case of late subacute bacterial endocarditis.

action of digitalis and associated cardiac medication on the electrocardiogram being well known.

The size of the heart may be determined by percussion or by x-ray and may help in the explanation of the axis deviation and of the strain which is or has been placed on the heart. The blood pressure should be included for similar reasons.

The physician's clinical diagnosis should be routinely added in order that a more accurate correlation may be accomplished between the clinical and the functional state of the myocardium.

Any additional aid, or facts confusing to the physician, should be added under the heading of the physician's problem. For example, if pregnancy is present, it should be so stated; if the patient is to undergo a major operation, or has some acute infectious disease or chronic ailment, a statement to that effect may be most helpful. This last column is extremely worthwhile and from it may be derived facts which may be of the utmost value in electrocardiographic interpretations.

These variations may be illustrated by the following cases:

Case 1. Mr. E. P. W. Aged 56 years. Height six feet, 6 inches. Weight 205 pounds. Patient has had permanent auricular fibrillation for thirteen years. The etiology is unknown. For the first two years this patient received digitalis and quinidine with no return to normal rhythm. No medication has been taken since this time. The heart is slightly enlarged. The blood pressure is within normal limits. The patient's heart has never been decompensated, and he carries on a normal, active and useful life. Serial electrocardiograms have showed no significant changes over a period of years. This electrocardiogram taken in 1937 shows auricular fibrillation with moderate left axis deviation and no other conduction abnormalities. This case tends to show that auricular fibrillation in itself is not serious and that the prognosis in a given case must depend primarily on the changes in the myocardium and the cardiac strain which is present.

Case 2. Mr. F. L. Aged 62 years. Height five feet, four inches. Weight 120 pounds. Patient had an atypical coronary thrombosis six years ago resulting in a complete heart block. The heart is normal in size. The blood pressure is 120 systolic and 30 diastolic, the large pulse pressure commonly being found in association with complete heart block. The heart has not decompensated, and the only symptom that the patient experiences is faintness on exertion. The electrocardiogram shows a complete heart block with a ratio of 3:1 and possibly an atypical left bundle branch block. The rate of the heart is 36. The severity of the conduction abnormalities are certainly greatly out of proportion to the damage and strain of the heart.

Case 3. Mr. R. W. Aged 24 years. Height five feet, two inches. The patient has had rheumatic heart disease with mild mitral regurgitation for ten years. Eight months ago he developed subacute bacterial endocarditis. Now a septic temperature, embolic phenomena, moderate anemia, and a palpable spleen are present. Streptococci viridans are found on repeated blood cultures. The heart is slightly enlarged to the left and a soft systolic murmur is present over the mitral area. At the present time the patient is in extremis. The electrocardiogram is within normal limits, except for the moderate sinus tachycardia. In spite of the mild mitral regurgitation, the axis deviation remains normal.

Case 4. Mr. J. W. Aged 55 years. Height five feet, six inches. Weight 190 pounds. The patient has a far advanced luetic aortic regurgitation of unknown

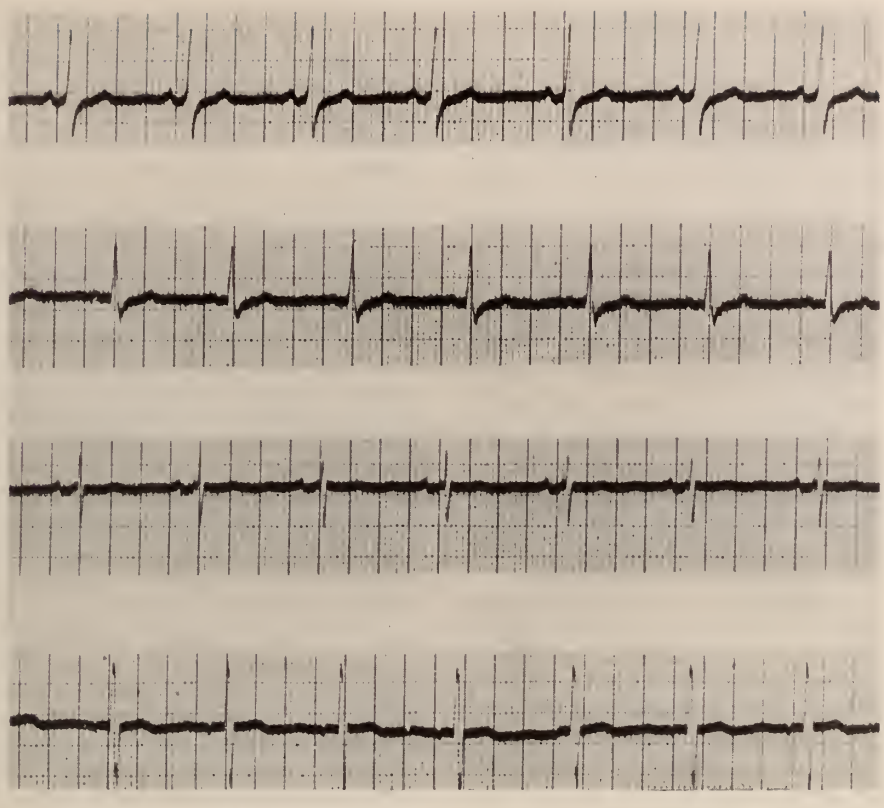


Figure 4. Case 4. Mr. J. W. Age 55 years. Far advanced case of syphilitic aortic regurgitation with only slight conduction abnormalities as probable evidence of coronary insufficiency.

duration. He has had many attacks of typical angina pectoris which is in all probability due to the narrowing of the coronary orifices. He has also experienced attacks of nocturnal dyspnea on occasion. His heart is markedly enlarged to the left and is of aortic contour. His heart has been decompensated on several occasions. The patient is maintained on three grains of digitalis daily, nitroglycerine grains one one-hundredth as necessary to relieve angina, and has had mercury and iodides in the past in the treatment of the syphilis. This individual clinically is moribund, but his electrocardiogram does not substantiate his history and physical findings. A few small changes which in themselves are not of serious import are present. Note the aberrant S. T. segments in leads one and two which is believed by some to be evidence of coronary disease and also the flattened T4 which may bear the same significance. It is interesting to notice that in this advanced case of aortic regurgitation normal axis deviation is present. This usually means that hypertrophy and dilatation of the right and the left ventricle are approximately the same. No evidence of aortic regurgitation as such is present on the electrocardiogram.

CONCLUSIONS

1. The routine addition of this simple chart to each electrocardiographic record would markedly increase the accuracy and value of a given electrocardiogram.

2. The interpretation of an electrocardiographic record is most useful when it is coordinated with the history and physical findings in a given case. Grave errors of underemphasis or overemphasis on a given electrocardiogram are liable to occur unless this coordination is made.

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PHLEBOCLYSIS EDEMA

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The use of saline phleboclysis is of tremendous help in the treatment of many conditions and, upon occasion, even life-saving. There are possibilities, however, of danger in its over-

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Deep appreciation is expressed to Dr. Bernard Fantus and Dr. Hans Popper for their hepful suggestions and instructive criticism.

use. This may be illustrated by the following case:

CASE REPORT

On November 14, 1938 there was admitted to the surgical service of the Cook County Hospital an obese colored woman of 48 years who for three months prior to admission had been suffering with pain in the right upper quadrant of her abdomen. Two weeks before entrance, constipation had become severe, and in the past week griping abdominal pains, obstipation with abdominal distention and vomiting, twice daily, had set in. On admission her temperature was 101°/R. On physical examination the abdomen was rounded, voluntarily rigid, distended, and peristaltic sounds were reduced with occasional periods of silence of from one to two minutes' duration and occasional borborygmi. The liver was enlarged. A mid-line suprapubic scar from a supracervical panhysterectomy in 1915 was present. On rectal examination green liquid stool was found. The impression was that of intestinal obstruction due to intestinal neoplasm, or possibly adhesions.

Fluoroscopic examination of the colon with barium revealed an obstruction at the rectosigmoid junction and multiple fluid levels in the colon. The urine examination was negative except for the presence of bile and urobilin. The hemoglobin was 65% and the white count was 9,800, mostly polymorphonuclear leukocytes. The blood Wassermann was negative; the icterus index showed only 7.0 units; the blood NPN was 35 mg.-% and the blood chloride was 280 mg.-%. The stool examination showed no blood.

The patient was given preoperative treatment for intestinal obstruction with Levine tube suction, intravenous fluids, mineral oil and enemas. She improved rapidly under this régime and the distention was relieved and the temperature dropped. In the first six days of her hospital stay she received a total of 16,000 cc. of intravenous fluids, mostly a mixture of 2.5% dextrose with 0.4% sodium chloride—or an average of 2,600 cc. daily. For the following six days she was fairly comfortable and required no parenteral fluids. Then the symptoms recurred, rather mildly, and she received 8,000 cc. of fluids intravenously and subcutaneously in the next five days. The symptoms again abated for another 2½ days after which there was another exacerbation and the distention suddenly became severe.

A Witzel type of ileostomy under local anesthesia was performed. There was no chance for exploration because of the marked distention. Drainage was good and in the next 2½ days she received 13,000 cc. of fluids, mostly 2.5% dextrose and 0.4% sodium chloride. She then began to cough and a generalized edema was first noted, not restricted to the dependent portion of the body. The lungs, also, were filled with fluid. A cardiac edema was ruled out clinically. The blood chemistry determination now showed an NPN of 45 mg.-%, a total protein of 4.75% with 4.25% serum albumin and 0.52% serum globulin or an albumin-globulin ratio of 8.2. The colloid, osmotic pressure was therefore 245 mm. calculated according to Farhas.

From this time on the fluid administration was restricted and except for a blood transfusion she received only 1,500 cc. of fluids in the last three days. Despite this she died on the fifth postoperative day, 25 days after admission and four months after the onset of symptoms. Altogether, in 25 days of hospitalization 39,000 cc. of parenteral fluids were administered. Actually, this amount was given in 14 days, since on 11 of her hospital days she received no fluids.

The postmortem examination revealed an annular constricting carcinoma of the splenic flexure of the colon with metastases to the liver and peripancreatic lymp nodes. A striking feature of the examination was the generalized edema of the body which was especially noticeable in the lungs, the abdominal wall and subcutaneous tissues especially in the lower extremities. Marked parenchymatous degeneration of the myocardium, liver and kidneys was also present. The kidneys weighed 340 Gm. together and were pale and rich in fluids. The enormously enlarged liver weighed 4,060 Gm. The edges were round. The parenchyma was softened. In it there were many umbilicated yellow white nodules of pinhead size up to 12 cm. in diameter. The periportal fields were edematous.

The liver section showed the liver cells to be granular and swollen and the sinusoids congested. Many of the liver cells were vacuolated. In general, the liver showed a marked serous hepatitis even in regions which were not in the vicinity of the metastatic tumor tissue.

On microscopic examination the kidney showed glomerular loops containing a normal amount of blood. The enlarged Bowman's spaces were filled with clotted proteins. The tubuli showed a sloudy swelling and their luminae contained an unusual amount of protein. No severe parenchymatous changes were noted histologically. The interstitial tissue was not swollen.

In addition to the carcinoma, the enormous intake of water was an important factor in the death of the patient. At the postmortem examination, the edema of the subcutaneous tissues and the parenchymatous organs was the most striking feature. The edema must be connected with the administration of the large amount of fluid.

DISCUSSION

Roessle[1] has shown that the intravenous injection of sodium chloride solution in large amounts to an experimental animal leads to a cloudy swelling of the liver and other parenchymatous organs. At times this may be severe, especially in the kidney. While in our patient there were other causes for a parenchymatous degeneration, it is felt that the increased fluid intake was an important factor. On the other hand, the classic experiments of Cohnheim and Lichtheim[2] have shown that in healthy animals, the mere injection of saline solution does not

produce edema.

Many other contributions in recent years have revealed the connection between hydremia and edema. Several possibilities can be mentioned. One factor may be the decrease of the colloid osmotic pressure of the blood due to the dilution of the plasma proteins. In the extravascular circulation of Starling with filtration and reabsorption in the capillaries, the reabsorption is affected by the colloid osmotic pressure. If in hydremia, the colloid osmotic pressure is lower, the reabsorption is diminished and fluid remains in the interstitial spaces. This explanation needs the demonstration of a low osmotic pressure which is mostly shown by a decrease of the albumin-globulin ratio (Foley, Keeton, Kendrick and Darling.[3]) In our case this explanation is not entirely sufficient, as the colloid osmotic pressure is not decreased and the reversal of the A/G ratio did not occur.

The second possibility is damage of the capillary wall as an important factor in the development of edema. If, due to an intoxication, the semipermeability of the capillaries suffers, protein escapes into the interstitial tissue with the filtrate fluid and prevents complete reabsorption (serous inflammation of Eppinger, Kaunitz and Popper[4]). The authors claim that sometimes in severe cases of capillary damage a large amount of globulin passes through the capillary membrane. This explains somewhat the protein deficit of the blood in our case, being chiefly due to a diminution of the globulin. The abundant administration of fluid and especially of hydrating sodium ions can easily explain the severe capillary damage—especially in combination with the intoxication due to the intestinal obstruction.

The changes of the parenchymatous cells are probably secondary to the serous inflammation and the increased concentration of sodium in the tissue fluid. The quoted studies have revealed that an edema fluid rich in proteins interferes with normal nutrition of the organ. Therefore, the permeability of the cells themselves is changed and sodium ions invade the cytoplasm, which normally is free of this ion (Hastings and Eichelberger[5]). Sodium within the cells effects hydration of the cytoplasm, causing intracellular edema or cloudy swelling. The chemical examination has shown the increased sodium content in the muscle tissue, which is due to an increase of intercellular fluid (McClure and Hinman[6]) and pathological presence of sodium within the cells.

CONCLUSION

The overuse of intravenous administration of fluid is therefore dangerous. In practice it may be sometimes difficult to determine the difference between the therapeutic and the pathologic doses. The problem is rendered even more difficult because of special problems involved in each particular patient.

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CARE OF THE SKIN IN THE NEW-BORN INFANT

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The sensitiveness of the skin of the new-born infant and its vigorous response to external factors such as mechanical and chemical irritation, thermal changes and bacterial injury is well known. A large part of the care the new-born infant receives in a hospital is therefore concerned with the prevention and treatment of skin irritations and infections.

Although luetic skin lesions and erysipelas are sometimes seen in the new-born, more commonly encountered are the non-specific disorders of the skin which may be put in one class and called neonatal dermatitis. This group of skin lesions consists of two main types. One variety may be called simple infantile dermatitis and includes such fairly well defined entities as intertrigo and erythematous macules and papules, the latter being sometimes known as "flea-bite" dermatitis of the new-born. The other variety may be called pustular dermatitis or pyodermatitis and embraces all vesicular and pustular lesions with or without exfoliation. In this group belongs impetigo or pemphigus neonatorum.

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The highly fatal but fortunately rare skin condition known as Ritter's disease or erythroderma exfoliativa neonatorum is in a class by itself. Some cases are associated with pustular and bullous lesions but in others no such lesions are seen. Ritter's disease is in many cases associated with a sepsis.

Heat rash consists of tiny vesicles, not pustules, on erythematous bases and thus is neither a simple infantile dermatitis nor a pustular dermatitis.

Although simple infantile dermatitis and heat rash are themselves very benign and cause little trouble they may predispose the skin to infection with resultant superimposed pustular formations. A certain percentage of new-born infants will, under the best conditions, have simple infantile dermatitis. Sanford has estimated the base level of nonspecific irritations to be around ten per cent.

Pustular dermatitis, while relatively benign and usually not serious in the individual baby, is epidemiologically of great importance because it spreads easily and may assume epidemic character in nurseries. Numerous epidemics of the condition have been observed in hospital nurseries.

The manner in which the skin is cared for has been greatly stressed and numerous routines have been tried in an attempt to prevent pustular dermatitis. There are three chief methods of taking care of the skin of the new-born. In one method, after the blood and vernix caseosa are wiped off, the skin is annointed with ammoniated mercury of varying strength. After this the baby gets daily baths with either water or oil. Mineral oil, olive oil, and commercial oils are most commonly used. Another method commonly employed is that of giving the baby an initial oil cleansing bath and thereafter daily oil or water baths.

Although the above two methods of caring for the skin of the new-born infant are of some value, neither of them have proven especially effective in preventing pustular dermatitis. In addition, ammoniated mercury has the disadvantage of not infrequently causing an irritation of itself and occasional cases of mercury poisoning with hematuria and tremors have been seen.

A third procedure which was first suggested about 1931 has attracted considerable attention and has been adopted in numerous hospitals. This is the procedure of not bathing the new-born infant at all during its hospital stay. In this method only the excess blood is gently wiped off after birth. The vernix caseosa is not removed and the baby's skin is not handled except in cleaning the buttocks with sterile water after the diaper is changed. This procedure was suggested because of the observation that in prematures who are not bathed at all, the vernix is gone in twelve hours and the skin looks clean and red.

Since adopting this method some institutions have reported surprisingly few cases of impetigo. In a recent city-survey it was found that fifteen Chicago hospitals are not bathing the new-born infants. Some of these hospitals have nevertheless had cases of pustular dermatitis and in one institution the affliction was quite widespread. Thus, contrary to several reports in the literature, changing the hospital routine from bathing to not bathing has not, by itself, abolished pustular dermatitis in the new-born. The incidence of pustular dermatitis is, however, certainly no greater when the baby is not bathed than when ammoniated mercury is used. The routine of not bathing the newborn infant is to be recommended if for no other reasons than that the baby's skin is handled less, considerable nursing time is saved, and the nurses are better able to carry out other procedures, such as washing their hands between caring for babies.

More important perhaps than whether the baby is bathed or not, and what is used on the baby's skin, is the nursing technique and general management of the nursery and maternity divisions. No matter how the baby's skin is cared for, pustular dermatitis will invariably occur if a nursery is overcrowded, if there is insufficient or inadequately trained nursing personnel, especially at night, causing the nursing care to be haphazard, and if the rules of aseptic technique, especially the wearing of clean gowns, and the washing of hands before and after caring for each baby are not adhered to. If the nursery is not under the supervision of a competent individual who is responsible for the procedures used, breaks in aseptic technique are bound to occur.

Keeping the infants away from foci of infection is important. Any infant or mother with a purulent lesion or discharge should be isolated. The nursing personnel should confine their duties to the nursery itself and the "floating"

nurse should never enter the nursery. A number of epidemics have been traced to nurses who have handled new-born infants after having been in contact with patients having purulent discharges on the maternity floor or elsewhere.

Epidemics of pustular dermatitis have also been traced to skin lesions in the personnel such as paronychiae, furuncles, or acne and to upper respiratory infections. Other cases have been said to be due to similar infections in the mother and also to breast abscesses and even to visitors who have contaminated articles in the mother's room. It is therefore important to remove mothers with any infection from the maternity division and to limit and regulate visitors. If possible the visitors should don clean gowns before entering the mothers' rooms, should not have any direct contact with the mothers and should never come in contact with the new-born infants.

Contamination of any article which comes in contact with the new-born baby's skin may lead to dermatitis. The laundry may not be handled and sterilized properly or the last rinsing water may not be neutral. Diapers which have not been adequately rinsed are often irritating to the skin. On the other hand the laundry may be properly washed and sterilized yet the worker who takes care of the laundry last may contaminate it. Water, oil, or powder used on the baby's skin may harbor infective organisms and be a source of infection.

Some epidemics have been blamed on congenital pustular lesions, the significance of which was not recognized at birth and occasional cases are said to be due to the use of strong antiseptics on the maternal operative field or the obstetrician's gloves shortly before or during delivery.

Temperature and humidity control of the nursery is of some importance especially in preventing overheating, although some statistics do not bear out the idea that pustular dermatitis is more common in the summer.

The infecting agent in pustular dermatitis of the new-born is probably a staphylococcus although some workers blame a streptococcus and others are unable to find any organisms in the pustules. The baby may develop lesions at any time during its hospital stay and may even be born with lesions. The incubation period is vague and may be several days but often seems short, perhaps only 12-24 hours. The lesions are at first small red macules which rapidly become vesicular or bullous and in 12-48 hours the contents of the lesion are slightly turbid. They then shrink or rupture leaving moist red areas which heal without leaving any scars. There is no crusting or frank pus unless secondary infection is present. The lesions may occur anywhere on the body except the palms and soles although warm moist areas and the flexures are favored, and they may occur in successive crops on adjacent surfaces by autoinoculation. An individual lesion heals in about five days but the lesions may coalesce and there may be exfoliation. General symptoms are usually not prominent but in severe cases sepsis may coexist, there may be intercurrent infection, or the exfoliation may be so extensive as to simulate Ritter's disease. The site of the initial lesions may indicate the mode of infection. If it is on the exposed parts of the body nursing technique or handling of the baby may be faulty. If the covered parts of the body are first affected the laundry may be blamed.

The occurrence or suspicion of impetigo in a new-born in the city of Chicago necessitates immediate notification of the Board of Health and prompt isolation of the baby in a separate properly equipped nursery with separate nursing personnel using aseptic technique. The isolation must be prompt when the first pustule is seen and not be delayed until the pustules are numerous or other babies have become infected. The nurses who take care of the isolated infant must not handle the other infants or even go into the normal nursery. All articles must be disinfected or properly sterilized before they are taken out of the isolation nursery.

The baby is usually taken off the breast and the mother's milk expressed, preferably by hand. If the mother has a private nurse and is in a room by herself we can see no objection to her nursing the baby. In fact the best arrangement might possibly be to put the baby in the mother's room and have one nurse take care of just those two.

The source of the infection must be looked for. The nursery and maternity personnel including nurses, interns, non-professional personnel and the mother should be examined, and nose and throat cultures made. If found to have a possible focus the individual should be re-

moved from the maternity division. The doctor himself should make sure that he does not have some small lesion which he might have overlooked.

The laundry should be checked as to the manner of washing and handling and if there is any doubt as to the sterility of the linen it should be autoclaved. The laundry personnel, especially those handling the laundry after it has been washed and dried should be examined and nose and throat cultures made. All materials which come in contact with the baby's skin such as water, oil, powder and cotton must be cultured and if found to be contaminated, they should be discarded. Also, it is the duty of the nursery supervisor to check the entire nursing technique in the nursery to be sure the various procedures such as proper hand washing are being carried out. After doing all this the source of the infection may be found but not infrequently the search is fruitless.

If more than one case occurs at the same time or if there is a succession of several cases it is best to close the nursery and set up a clean nursery with other equipment and different personnel who have had complete physical examinations and nose and throat cultures. Any contacts in the contaminated nursery who develop pustular lesions are moved to the isolation nursery, otherwise they are sent home at the usual time or even earlier if possible. When the contaminated nursery is empty, all of the equipment in it is properly washed and sterilized. The room and such equipment that cannot be sterilized by autoclaving or boiling is washed and painted. The personnel is given a vacation for several days and the nursery then reopened in two or three days.

If the epidemic is severe or if new cases recur after the nursery is reopened it is best to temporarily close the whole maternity division. Then when all of the contacts have gone home the nursery and all of its equipment is cleaned as noted above before the maternity division is reopened.

In order to obtain a true insight into the extent of the epidemic it is necessary to check on all babies who had been discharged from the hospital during the time involved. Not infrequently a baby is discharged apparently normal but in the next few days may develop lesions. Where one case of pustular dermatitis is found in a nursery, checking back will often reveal that there have recently been other cases.

It must not be forgotten that where an epidemic of pustular dermatitis occurs in a nursery for the new-born, gastro-enteritis or epidemic diarrhea may be "around the corner." Not because there is any known etiologic relationship between the two, but because the same breaks in nursing care and aseptic technique which lead to pustular dermatitis also predispose to epidemic diarrhea and a personnel which is lax in some procedures is also probably lax in others.

The treatment of the individual case of pustular dermatitis is less important than the epidemological control since in most cases the lesions heal by themselves. There is no specific treatment and each physician has his own preference. A great many different agents are used. We might mention among others gentian violet, mercurochrome, metaphen, merthiolate, silver nitrate, alcohol, ammoniated mercury, mercury bichloride, calamine and ichthyol, boric acid, potassium, permanganate and collodion.

A good method is that of mopping up each lesion with a sterile applicator, then touching it with ten per cent silver nitrate and painting the whole area with one per cent aqueous gentian violet. The arms are splinted to prevent scratching and the areas are exposed to dry heat. A heat cradle or simple premature incubator is valuable; ultraviolet ray exposure may also be used. While there may be some objection to the use of medicaments which stain the skin and make the condition look worse than it is, our experience with gentian violet has been satisfactory.

The early recognition of pustular dermatitis in a nursery is of utmost importance. It is folly to wait for large pustules or bullae to develop before isolating the infant. Von Reuss emphasized that "pemphigus neonatorum is not a clinically uniform disease but a disease group with great variation in regards to size and variation of lesions, contagiousness and disease course."

One difficulty which has to be overcome is the reluctance of many hospital authorities to call a dermatitis impetigo, even though pustular lesions are present because a break in technique or poor nursing care is implied. This unwillingness or lethargy in the recognition of pustular dermatitis frequently leads to delay in proper isolation and thus increases the danger of an epidemic. The condition will crop up now and then even in the

best conducted hospitals but proper procedures plus constant vigilance will make epidemics of pustular dermatitis less frequent.

SUMMARY AND CONCLUSIONS

1. The term "pustular dermatitis of the newborn" is to be preferred over "impetigo" or "pemphigus neonatorum" because the lesions may vary in size, type, contagiousness, distribution and course.

2. Although not bathing the skin of the newborn infant may not by itself reduce the incidence of impetigo, it is the preferable procedure because the skin is handled less and there is a saving in materials and nursing time.

3. Aseptic technique and proper procedures both in the nursery and maternity division, plus prompt and adequate isolation are most important in lowering the incidence of pustular dermatitis and decreasing the number and severity of epidemics of this condition.

4. The rules of "Keep the baby away from infection" and "Keep infection away from the baby" as emphasized by Dr. Herman N. Bundesen are paramount.

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INDICATION FOR OFFICE TREATMENT IN RECTAL DISEASE

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In physics inertia is defined as that property of matter by which it tends to remain in an existing state of rest, or of motion in the same straight line, unless acted upon by an external force. In medicine inertia is the tendency of the medical profession to continue in the same course of diagnosis or treatment unless there is the application of some other idea or improvement in that course. Just as a heavy body continues at rest until forcibly started in motion, and then continues in motion unless forcibly stopped, so does the medical profession require a considerable force of opinion and experience to first adopt a new method, and an equally great force to prevent it from moving to extremes, and finally bring it to rest in a new position. This inherent conservativeness of the profession has much to commend it. It prevents the adoption of many new and untried changes that may be harmful. When adopted with enthusiasm it rapidly explores all the fields of usefulness. After a time there is a sensible evaluation of the method, the good is retained and the bad rejected. The total improvement over the original state is the actual progress.

The treatment of rectal diseases is a good example of medical inertia. From ancient times until the middle of the 19th century rectal diseases were considered almost as afflictions and were either totally ignored; treated by useless palliative measures; or were subjected to surgery that was so distressing to the patient that it could be considered radical. With the discovery of the injection treatment of hemorrhoids there was introduced an improvement in the existing methods of treatment that allowed many cases to be treated without operation. The new method was actively opposed by the medical profession at the start, but slowly the soundness of the method was recognized and it finally became a recognized procedure very generally used.

A treatment of hemorrhoids that was a simple office procedure was seized upon by some members of the profession who capitalized on it. They were further aided by the introduction of local anesthetic methods that could be easily used in the anal region. These two innovations were the basis for the school of so-called ambulant proctologists who undertook to treat rectal diseases solely in the office. The fact that they advertised their wares in an unprofessional manner led to their being ostracized by the profession in general. They were consequently denied the use of hospitals and soon were able to treat patients only in their offices. It then became necessary for them to convince patients that office treatment was much better than hospital methods, or they would soon have no patients.

More recently there has awakened in the medical profession a realization that rectal diseases had been neglected. There has been a greater interest in the treatment of rectal diseases, and

with it the proper evaluation of the office methods and hospital methods of treatment. We have now reached the stage where procedures are fairly well standardized and the indication for each established. It is well to review conditions where hospital treatment is necessary and where office treatment is sufficient.

Rectal cancer, extensive strictures and pelvirectal abscesses are examples of the group of cases that require profound anesthesia and extensive or radical surgery. In this group of cases it is generally admitted that hospitalization is the only course. The seriously ill patient with an acute exacerbation of an ulcerative colitis is an example of the type of case not requiring surgery who is also best hospitalized.

Office treatment measures are sufficient in the functional constipation cases, the chronic or quiescent colitis cases, injection treatment of internal hemorrhoids and minor surgery of the anal region that can be easily done under simple infiltration anesthesia. All of the diagnostic measures necessary in proctology—including the sigmoidoscopic examination, laboratory and x-ray examinations—can easily be done as office procedures.

Aside from these well defined groups there are many other conditions that can be treated as office procedures, or for which the patient can be hospitalized for a short time. Anorectal fistulae are examples of this group. In these cases, by the use of multiple stage operations under local anesthesia, sloughing pastes, and by the exercise of considerable ingenuity it is possible to bring about a cure without sending the patient to the hospital. The treatment often extends over a period of months and in some of the more difficult cases is never complete. These cases treated by a one-stage operation, are usually hospitalized less than a week and are again up and about in another week. The physician who has hospital facilities available will therefore recommend hospitalization in these cases. It is the opinion of the writer that hospitalization for a short period of time is preferable to make-shift office procedures in all of this group of cases that can be treated by either method.

Office treatment of rectal disease should be limited to the injection of simple internal hemorrhoids, the removal of skin tags, thrombotic hemorrhoids, anal fissures and ulcers. Pruritus ani, quiescent or chronic ulcerative colitis, syphilitic, gonorrheal and chancroidal lesions of the anal canal or rectum, functional constipation, irritable colon, and other medical conditions are also treated in the office. Rarely the poor general condition of the patient make hospitalization necessary. These cases make up the bulk of patients seen by the general practitioner and the proctologist. The remainder of the cases not requiring radical surgery are best treated in the hospital, where an operation under caudal, spinal or general anesthesia followed by a short period of hospitalization is the method of choice.

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SULFANILAMIDE IN DIPHTHERIA

Report of Cases

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The uses of sulfanilamide during the past few years has been manifold. One daily expects to see reports on new uses of the drug. It has been my good fortune to be in attendance during a diphtheria epidemic, and with or without additions noted make use of sulfanilamide. The few cases given will be abstracted briefly, giving only the salient points.

CASE REPORT

CASE 1. M.L. Nine-year white girl was admitted to hospital because of headache and sore throat, on November 6, 1938. Her temperature was 101.6 but she did not appear acutely ill. On November 7, a slight membrane on tonsil was noticed. Culture was taken and direct smear at this time showed diphtheria and streptococcus bacilli. Sulfanilamide gr. 5 q.i.d. was started.

On November 8 the membrane had spread over entire left tonsil. On November 9 there was a nosebleed and spread of membrane over both tonsils and uvula. Although the laboratory report had not been returned, and the odor was not typical of diphtheria, a clinical diagnosis of this disease was made. A skin test with antitoxin showed marked sensitivity. Desentization was begun, but before 1 cc. had been given marked urticaria and angioneurotic edema appeared. After several hours several small doses, counteracted by adrenalin, were given.

On the eve of November 10 the laboratory reported diphtheria bacilli in nose and throat. On November 11 an attempt was made to give the antitoxin subcutaneously with glucose and adrenalin. When about 150 cc. of a 500 cc. solution containing 20,000 units of antitoxin had been given the condition of edema and urticaria became so severe that the hypodermocylsis was discontinued. In all about 10,000 units were given to patient since onset of disease. However, patient's condition was

good, and she had an uneventful recovery except for a serum reaction on the 15th and 16th; and a gallop rythm on the 17th.

Cultures were repeatedly positive. Sulfanilamide had been given continuously from the 7th to 15th. She was discharged December 11 in good health, although her heart rate has been rapid since then.

Case 2. J. M. This 15-year old white girl contracted diphtheria from case 1. On November 16th she complained of headache, fever and sore throat. On the 17th and 18th she had several nosebleeds. A nose and throat culture was positive for diphtheria. Sulfanilamide was started November 18, and continued until November 26. There was an uneventful recovery.

Case 3. R. Y. A colored male, aged 9, entered the hospital December 26, complaining of sore throat, pain in abdomen and emesis. Temperature was 98.8, P. 80, R. 20.

On physical examination throat was injected; no membrane was visible, however. Patient was put on sulfanilamide. On December 27 temperature rose to 103.8 and several white patches were seen on tonsils. Abdomen was distended but no marked tenderness or rigidity was noticed. There was a spread of the membrane to cover both tonsils and uvula. Temperature was septic in nature. Abdominal pain was quite severe throughout. On December 31, five days after entrance, temperature began to fall, patient felt better and throat began clearing. On January 2 the temperature was normal and child made an uneventful recovery.

Sulfanilamide was given until January 2, q.i.d., then b.i.d until January 6 before being discontinued. He was discharged January 15 as recovered.

DISCUSSION

The above cases are of interest because a new use for sulfanilamide appears to be indicated. Before proceeding, let me state that in cases of carriers I have been unsuccessful in the use of the drug. In all, six cases of clinical diphtheria, as evidenced by repeated laboratory reports and physical examinations, were treated with sulfanilamide with full recovery in all. One of these had not over 10,000 units of antitoxin. In my contagious experience this amount is not sufficient for treatment in the usual case. Assuming this to be the case, the other five were typical and had no antitoxin. It is also of interest that all three cases cited above had positive Shick tests before and after recovery.

The method of administering the drug is similar to that used routinely in my practice, namely, one five-grain tablet four times daily until temperature falls, then reduce amount by half for several days, then usually either discontinue drug or give one tablet daily for several days.

The question of failure of carriers to respond to the drug is an interesting one. This failure may be explained on theory, that has apparently been proven, that sulfanilamide only inhibits, but does not kill the growth of the organism. This apparently holds true for the streptococcus also, as shown by Hoyne and Bailey.[1]

Whether sulfanilamide is really of value in diphtheria can only be determined by passing of time. In a contagious hospital and given an early case, the drug can be used safely and without danger to the life of the patient. I would hesitate at this date to use it in a severe case unless some such situation again arises as did in case one. In that case the difficulty in administering the antitoxin was so great that in 36 hours not over 10,000 units had been given. It is unusual for signs of reaction to occur so rapidly during desentization.

CONCLUSION

1. Six cases of diphtheria were treated with sulfanilamide with recovery in each.

2. Diphtheria carriers are not affected by sulfanilamide.

3. The Schick reaction is unaffected by the drug.

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THE NERVOUS SYSTEM AND THE ALLERGIC

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Many theories have been presented to explain the mechanism of allergy, none of which are completely satisfactory.

Vagatonia or vago-sympathetic dystonia has always been considered a factor in the allergic: in fact, the entire nervous system is intimately connected with the mechanism of allergic response.

Allergic conditions are more frequent in the United States than in the European countries and not so pronounced in the colored race.

Ratner,[1] in the study of a large group of allergic and normal children, was unable to find a greater incidence of allergy in the families of the allergic group; he believes that the development of sensitiveness is due to a chance occurrence of certain factors and not to a hereditary mechanism.

In all other diseases there are two main etiologic factors, namely, the intrinsic and the extrinsic. The extrinsic factors act as irritants directly upon the tissues and indirectly upon the nervous system, producing an unstable or disordered condition of the vasomotors, and very frequently does not respond with symptoms as described in the allergic. For example, a person sensitive to eggs at certain times will not react at other times when eggs are ingested.

The same may hold true in pollinosis, as there are many days during the hay-fever season when the pollen count is high, and the patient has little or no symptoms; at other times the pollen count may be very low, and the patient suffers intensely.

Interesting experiments have been recorded by Dr. Rowe of California where he describes a number of cases in which food-sensitive individuals could eat certain foods in a certain locality without noticing any local or systemic reaction and becoming severely ill if the same foods were consumed in a different locality. The intrinsic factors act directly upon the nervous system, which is frequently responsible in many cases for hypersensitiveness.

Salter,[2] in his works, maintains that the nervous system is the seat of the essential pathologic lesion, contending that symptoms depend on spastic contraction of the bronchial muscles which is of excitomotor or reflex origin, and that the extent of involvement differs in every case. In some it is restricted to the nervous system of the air passages, and in others to the gastric or pulmonary portion of the vagus. The source of irritation, in some cases, may be in the brain, and in others may be of humoral origin.

A great number of allergists believe that the allergic state is essentially a neurosis consisting of a disordered or unstable nervous system. That the nervous and psychic stimuli have an influence in allergic conditions is quite generally accepted.

In recent years due to the interest in psychoneurotic problems, an attempt has been made to ascribe the onset of asthma, urticaria, or other allergic conditions to such psychic factors as fear, anxiety, anger and other emotional states. Numerous cases have been reported in which the cause was attributed to psychic stimuli. Psychotherapy, including removal of the psychic stimuli by hypnotic suggestion, was followed by relief or cessation of the allergic attacks.

In one of the earliest writings by S. Freud[3] the relations of the ego and the outer world are discussed, and many psychoses are presented in relationship with a disturbance of that same ego. He discusses at length the psychoneurotic mechanism in asthma. These ideas are now the common possession of mankind.

Otto Fennichel[4] gives a concise discussion of the influence of respiration on emotional behavior and vice versa. He gives a number of examples in which he establishes the fact that bronchial asthma is nothing but a psychosomatic affection. Freida Reichman,[5] in her article on psychopathology of bronchial asthma, gives proof that bronchial asthma is a neurosis of the respiratory organs of an otherwise psychopathic individual, who, besides his respiratory symptoms, invariably shows other psychopathological signs. It is quite characteristic of asthmatics to show swings of mood ranging between hypomaniac, downright depressive, or melancholy states. Many psychoanalysts agree that the psychic concept underlying asthma is merely a theoretical construction, because up to the present time psychic processes cannot yet be understood from research in brain physiology, and yet internists like Professors Strumpel, Eppinger and Hess, in their respective textbooks, regard asthma as a nervous disorder—even as a syndrome of anaphylaxis; by this they delegate the phenomena into the realm of unknown causes, which may lead to frequent respiratory disturbances.

Erwin Moos[6] is convinced that the psyche is nearly always the first-hand factor in respiratory diathesis. He treated sixteen cases by strict psychotherapy after many methods had been used in vain. Following this treatment he noticed that eosinophiles disappeared from the blood and sputum. The asthma spirals and crystals were also no longer seen and did not reappear, even after exposure to the specific allergen. Many cases of other authors are cited in which psychoanalysis was used with very good results, terminating in amnesia of the underlying psychic trauma.

Dr. Peterson at the University of Illinois in his book, "Weather and the Man," states that the nervous system is subject to weather changes and will precipitate many diseases of which no etiological factors can be found.

Rappaport, Nelson and Welker in 1935 reported that seven patients with pollen asthma in a pollen-free room experienced an epidemic of asthma on a day in which there were sudden weather changes, but in which there was no increase in the exposure of pollen.

Osler[7] maintained that bronchial asthma is a neurotic affection, and for many years in the various editions, neurosis was considered an etiological factor; in the chapter on psychical causes he states that anxiety neurosis or emotional disturbances play some part in producing attacks of asthma.

Clarkson[8] emphasizes that a potentially allergic child is born with both a psychic and somatic handicap. Such a child becomes either an egocentric or an overly receptive adult with a predisposition to react to all types of stimuli.

It has been reported that tension decreases the expiratory quotient. There is a distinct respiratory curve during the proces of seeing, recognizing and naming objects. Truth and falsehood have distinct respiratory symptoms. Pleasure, pain, anger, disgust, wonder, fear, laughter and hatred produce changes in respiration, and under hypnosis the respiratory activity can be influenced by suggestion. This was demonstrated on a young girl, aged 18 years, who gave a severe reaction to intradermal tests to egg whites. A wheal, one inch in diameter, surrounded by a raised erythematous zone three and one-half inches in diameter developed around the site of the injection. The next day the test was repeated when the patient was deeply hypnotized, and it was suggested that no reaction would occur. The patient was completely under hypnosis for one and one-half hours and suggestions frequently repeated; no reaction occurred. The next day the test was made in the normal state of the patient, and the original reaction was obtained.

Costello[9] describes a child with no family history of epilepsy who began to suffer from asthma at the age of ten and epilepsy began at the same time. Attacks occurred always at the end of an asthma paroxysm. As the asthmatic attacks increased, the epilepsy became more frequent and when the asthma improved the epilepsy disappeared.

Rogerson[10] has made a detailed study of thirty cases of asthma and eczema at Guy's Hospital in England. He discusses the psychologic makeup and nervous factors in allergic children, whom he finds sensitive, apprehensive, and with family hereditary inhibitions of emotional stimuli.

Todd[11] finds that nervous tension, distractibility, restlessness and short attention span together with irritability, whining and proneness to fatigue. He also describes the allergic child as one who is over-active, intensely excitable, and egocentric in his makeup.

Credille[12] maintains that more emphasis should be placed on the importance of fatigue in certain allergic diseases which has been instrumental in precipitating the initial asthmatic attack. Prolonged rest has been found a valuable adjunct to the conventional forms in the treatment of asthma.

Catherine MacInnis[13] made a survey of more than seven thousand phychiatric patients and found one-half of one per cent. of these patients to be allergic. The allergic symptoms became worse upon the approach to mental balance.

Clarkson[14] in an analysis of the nervous factor in juvenile asthma makes the observation that the following features, in varying degrees are common in every case: intensification of emotions, disordered biochemistry, habituation reflex (grouped around fear), escape from reality, and an expression of a definite psychosis.

He describes the case of a little girl who had fallen asleep with asthma symptoms unchecked. The author quietly stole up and kept whispering suggestions to the effect that the asthma would disappear, and in ten minutes the attack ceased.

Rogerson[17] reports, following an initial study of twelve children suffering from asthma in whom the importance of psychologic factors was evident, that the personality likeness of many of these cases was so striking, one began to speak of asthma personality, in which a high intelligence and an underlined aggressiveness were combined with over-anxiety and insecurity. The individual attack of asthma depends on the state of tension. As the tension is removed the patient may withstand such a stimulus without developing an asthma attack. In conclusion he emphasizes that psychologic treatment is in some cases able to prevent attacks completely, and in some instances it is able to assist the known physical remedies.

At King's College, University of London, in an intensive study of the psychologic factors in twenty-five cases of asthma and asthma pru-

rigo it was found that much can be done from that angle. The impression gained is that psychologic factors might lower the threshold for stimuli ordinarily producing an attack; with psychotherapy, they believe that it has as much to offer as any other average method of treatment.

E. B. Strauss, Guy's Hospital, London, England,[18] studied thirty-seven unselected cases of adults with asthma in regard to nervous, psychic or emotional factors; it was found that such factors definitely played a part in twenty-five of these patients.

Jollowicki[20] describes a boy, sixteen years old, who had frequent attacks of asthma. Examination revealed a close maternal attachment. The asthma attacks were cured only when the boy went to college and had affairs with women.

A similar case is that of a boy, thirteen years old, who had attacks of asthma only on Saturday and Sunday, and whose trouble was traced to the influence of a psychoneurotic mother.

Obendorf[21] cites in great detail a case of apparent asthma in a young woman who had a neurotic family background and environment. Significant points in the history were a neurotic bedridden mother, a socially unsuccessful father, and an incompatible husband, who also had hayfever. The author thinks that the asthma is a manifestation of a conflict concerning admission and reception, domination and submission, unconscious masculinity and conscious femininity.

H. Handa[22] claims that bronchial asthma is a vagus neurosis of the responsive organs. He explains the action of epinephrine and ephedrine as that causing an increasing tonus of the sympathetic nerves, thus overcominng the excess of vagatonia.

Freudenberg[23] claims that among asthmatic children one may frequently observe those with a marked inferiority complex and a desire for recognition and attention. The author cited a case of a boy, eleven years old, who had asthma attacks since he was three years old. He was sent to a health resort, where he was free from attacks but relapsed as soon as he came home. His asthma became much worse since the birth of a sister. The author thinks he uses his attacks as a means of centering the others' attention upon himself.

Clarkson,[24] in a recent article, states that he studied three hundred cases of asthma seen in private practice and discussed the nervous factor in 187 cases, in which the ages ranged from two to twenty years. He found that the psychologic element was present in almost every case, the factor governing it being the nature of inheritance and environment. Even before the allergic state is manifested the allergic child is over-sensitive and apprehensive. In them the emotional stimuli is a diffuse wavy radiation for which the normal reciprocal is faulty. The resultant loss of localization of stimuli, together with failure of adaptation enhances a potential overflow for asthma to make its first appearance. A purely psychic cause for the onset of asthmatic attacks was present in 2 per cent. of cases.

That allergy enhances the already existing psychic disturbance is shown by the change in behavior, both before the individual attacks develop and after appearance. Taking the Prausnitz-Kustner reaction is proof of the presence in the circulation of sensitization substances apparently capable of producing gross psychologic disorders. He cites an instance in which by hypnosis he caused a negative reaction on intradermic tests to eggs to develop in a patient who previously and subsequently gave a marked positive reaction to eggs.

Once asthma is developed, all the characteristics of a conditioned reflex are acquired, and now a memory of a previous attack is sufficient stimulus to precipitate another attack. For example, recalling an emotional disturbance, the suggestion of artificial flavors or a distended stomach may all be the provocative factors in a sensitized individual and the basis of a conditioned reflex which may result in a purposive simulation, hysterical habituation, or voluntary reinforcement of asthma, a stage may be reached where the allergic "catalysts" are no longer needed for asthma to develop, and the habituation reflex may be used independently of its allergic origin: it is important therefore to consider the social and environmental maladjustments.

PSYCHOGENIC ILLUSTRATIVE CASES

A white male, aged 72, complaining of bronchial asthma for the past fifteen years, has been under the care of many physicians with no relief. The only relief obtained was from the use of hypodermic injections of adrenalin. His family history was essentially negative, and he gave no reaction to the intradermal tests. On consultation I advised him to spend a week

at the hospital to break all possible contacts in his home environment. He agreed to go but insisted upon taking a hypodermic injection of adrenalin before we started, although at that particular time he was free from asthma. The hospital being only a few blocks away I assured him there was no cause for alarm. On the way he developed a very severe attack and became cyanosed. When we got him to the hospital, it required the help of two attendants to remove him from the car. We gave him adrenalin intracutaneously, also inhalations of oxygen and helium gas for a period of two hours, after which time he made a complete recovery; during his stay at the hospital he was perfectly free from attacks. He then decided to go home for one day, and insisted upon taking adrenalin with him; when his request was denied, he developed a very severe attack, became cyanosed, with cold perspiration, and required the use of adrenalin. From the information gathered since he has been using adrenalin on the average of one cc. per hour for the last two months.

A white female, aged 27, states that her asthma began at the age of twenty-one. Her attacks came on daily at about 6:30 P. M. and lasted usually until midnight; she remained perfectly free for the balance of the night and next day. Her family history is negative. She graduated from high school at the age of seventeen; was very active, enjoyed sports such as horseback, tennis, golf and swimming. Being the only child of her parents she was spoiled to the extent that her parents had no control over her. At the age of eighteen she married a man many years her senior. Unfortunately she or her husband were sterile, and not being able to give birth to a child she considered her marriage a failure. Following an explanation of the etiological factors in cases of sterility and assuring her that the future may bring about pregnancies her attacks completely ceased for a period of four months. She then obtained information from a gynecologist as to her physical condition and was informed that her chance for pregnancy was remote due to an infantile uterus; from then on her attacks became very severe and could not be controlled. The only reason for the attacks coming on at 6:30 P. M. responds to the usual time of her husband's arrival at home.

A white female, aged 19, complains of a chronic bronchial asthma for the past twelve years. Her attacks were much worse at night and usually of a severe character, lasting several hours. She is inclined to be very nervous and emotional. Her home life has been very difficult; she cries at the slightest provocation. Her family history is that of her mother having had bronchial asthma for many years, otherwise the family history is essentially negative. To skin tests she gave a positive to dust only, for which she has been treated for four months with freedom from attacks. She was married and remained well for a period of two weeks when she suddenly became progressively worse. From the history obtained it was revealed that her sexual life was not normal. Having properly advised her, she returned a month later stating that she was perfectly free from asthma and has been for the past year, although our methods of treatment were not altered.

A white female, aged 37, began with asthma at the age of twenty-two following a very severe cold in the winter. Her attacks were severe and mostly after going to bed. Family history of definite allergic character. To skin tests she reacted to pollen and dust for which she has been treated with excellent results. Her husband is a traveling salesman, and on the road most of the time; on six different occasions prior to her husband's arrival she would develop very severe attacks of asthma which lasted from 24-48 hours. These attacks would cease upon her husband's arrival and she remained perfectly free until the next coincidence.

A white female child, aged eight, began with asthma at the age of four. Her attacks would come on at night only. To skin tests she gave multiple sensitivenesses. The child was of a very nervous disposition, highly irritable, and very fond of her mother. She insisted on sleeping with her mother and father; if her wish was not granted, she would develop an attack between 2-3 a. m. During one of her attacks the child was removed to the hospital for one week, during which time she showed no signs of asthma or bronchitis. Upon her return home her condition reoccurred. I gave the child adrenalin but got no results. I then convinced her that by giving her some medicine to take internally it would relieve her condition; I prescribed syrup of sarsaparilla to be taken at bedtime and also informed her that if her condition did not improve she would have to return to the hospital. At once she began to improve and for the past one and a half years she has had no attacks of asthma.

A white female, aged 22, has suffered from asthma for the past two years which was not related to food or season. Her attacks were worse at night. Her family history was essentially negative. In her history she admits to having been a spoiled child. She is very active—likes to swim, dance, and attend movies. She is also a very emotional individual. To skin tests she gave a positive reaction to dust and ragweed only. She was treated for a period of six months during which time she was perfectly free of asthmatic attacks. About two months ago, following an unpleasant domestic experience, her attacks became much worse, although being under the same management and treatment. She inferred that the treatment given her was of no benefit. I advised her to stop treatment and not to return. Several weeks later she came back with an apology and wished to resume treatment. Ever since, which is approximately one year, she has been perfectly well.

A white female, aged 38, developed urticaria about one year ago, severe in character; it would come on daily at 5 P. M. She gave negative reactions to all allergens; elimination of all possible allergens as well as removal from her home to the hospital did not relieve her condition. Her urticaria would appear the same time every day. However, she would be relieved by the use of adrenalin and also large doses of sedatives. Following her stay in the hospital she was perfectly free for a period of one month. Several weeks

later when driving her car with her children in it she met with a slight automobile accident; although no one was injured she developed a severe case of urticaria within ten minutes.

I began three years ago to investigate the allergic state of the insane patients in one of our state institutions, and I have found only six cases of the allergic type in a group of 4500 patients. Among those six only four gave positive reactions to skin tests, and their symptoms were of a mild character.

PSYCHOPATHIC ILLUSTRATIVE CASES

A white male, aged 73, invalided in bed for the past three years with a diagnosis of arteriosclerosis and organic brain disease. The history of the patient reveals that he has had occasional attacks of asthma within the past two years—usually in the fall and the spring. To the intracutaneous tests he gave a one-plus reaction to ragweed and a one-plus reaction to dust (house). His attacks are mild in character and require no medication.

A white male, aged 66; diagnosis—cerebrospinal sclerosis. Had asthmatic attacks, mostly in the fall, for the past seven years, requiring no medication. He has a hemoplegia on the right side with some atrophic disturbances. To the intracutaneous tests he gave a two-plus reaction to ragweed and timothy.

A white female, aged 65, admitted to the institution in 1904, with a diagnosis of primary dementia. Recent diagnosis—mental deficiency with superimposed psychosis. She is well developed and well nourished with slight enlargement of the thyroid. Tachycardia and cardiac irregularity. To intracutaneous tests she gave a two-plus reaction to ragweed, orris root and crabmeat.

A white female, aged 74, admitted to the institution with a diagnosis of senile dementia. Arteriosclerosis was present. She is able to answer questions rationally. She maintains that she has had asthma since childhood but has been worse for the past twelve years. In fact, she was wheezing on the day of her examination. General examination reveals emaciation and emphysematous chest. Heart and lungs essentially negative. To the intracutaneous tests she gave a positive two-plus reaction to ragweed and timothy. Her mental condition has improved in the last twelve years in contrast to her asthma which has been getting worse.

A white male, aged 36, admitted to the institution in 1935 with a diagnosis of general paresis. The patient is married but has no children. Had meningitic encephalitis in 1935. Treated with malaria in 1936 with remarkable improvement. Patient appears to be very rational and very alert. Has had hay-fever for the past six years—beginning with the month of August and lasting until frost. History of allergy is negative. His attacks are becoming progressively worse. To the intracutaneous tests he gave a four-plus to ragweed, timothy, two-plus reaction to house dust and orris root; his attacks of hay fever are getting more severe in contrast to his mental condition which is getting much better.

Colored male, aged 41, admitted to the institution in 1932 with a diagnosis of general paresis and symptoms of deterioration and irrationality. Attacks occur every night between the hours of twelve and one which he maintains begins with a cough, and if he is not able to bring up mucous he has difficulty in breathing. The patient complains of nightly attacks of asthma although they have not been witnessed by his attendants. To intracutaneous tests he gave no reaction to any of the inhalants and to none of the ingestants.

Taking into consideration that allergy is a common factor among the general population, and that approximately 15 per cent. have either a major or a minor allergy it is of interest to note the small percentage of allergy which occurs in patients with organic mental disturbances. In a few of these cases where their mental condition is improved their allergic symptoms became progressively worse and vice versa.

In conclusion I wish to emphasize that in presenting this paper I am not atempting to discard the importance of antigen antibody reactions or claim new and original ideas in the etiology of allergic diseases. I have only gathered the opinion of various specialists in the field of medicine and combined them under one title in order to illustrate the relationship of the nervous system and that of the allergic individual.

In addition, I have presented a few cases histories from our own files which defintely proves that the nervous system in the allergic is hyperactive.

I do not maintain that the nervous system is the sole etiological factor in allergy; however, I am of the opinion that the nervous system is of great importance in most of them, by releasing substances, such as histamine or acetyl choline into the blood stream and tissues which create a hyperfunction producing the allergic phenmoenon, and it frequently is the sole factor in many of them.

Therefore, if we are to treat allergic individuals successfully, we must not confine our treatment solely from the knowledge derived from skin tests, but must attempt to treat the individual from a psychological and a neurological standpoint as well in order to bring about clinical improvement.

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SURGERY IN THE MENTALLY ILL

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I appreciate the honor Dr. Campbell has given me by asking me to address this meeting. However, it was with a great deal of timidity that I accepted his invitation, knowing that a great many of you gentlemen have had some thirty to forty years of experience with the treatment of the insane while I have had a mere six years as a consultant surgeon. I believe that the best way to take up this very difficult subject is to start out first by going over briefly the surgical problems in an insane institution in general and then taking up the mental effects of surgery on the different mental diseases.

We all know that the history is the most important thing in the diagnosis in any medical or surgical patient. Most psychotic individuals, at least, are unable to give any subjective symptoms. Usually the first indication of an acute illness in these patients is detected by observing some abnormality in their behavior, which is often several hours after the onset of the illness. They do not complain of pain or nausea nor is their posture or facial expression suggestive of discomfort. The mental disability predominates and to a greater or lesser degree masks most physical abnormality which they may experience. Often they eat their meals and conduct themselves in their usual manner only a few hours prior to their death. The objective as well as the subjective symptoms are often absent or, if present, misleading. Examination of the abdomen in acute abdominal conditions usually does not show the tenderness, rigidity, distension and other cardinal symptoms that one usually finds. The symptoms which are wholly or in part under reflex control are frequently abnormal, although the rigidity in perforation of the bowels or spreading peritonitis is usually present to some degree. Rarely do they present the expected picture of shock and, for the most part, the temperature, pulse, respiration, blood count and urinalysis are of little diagnostic value. In other words, the history usually amounts to some attendant having found the patient not acting the way he usually has acted during the last twenty-four hours or so and thought that he should be brought into the hospital. We have tried during the last four or five years to remedy this by: (1) having a good history and physical examination on admittance; (2) periodic examination every six months for all patients; (3) having the surgical staff examine all questionable surgical cases; and (4) instructing nurses and attendants to notice all lumps, swellings, sores and other abnormalities while bathing the patients.

The next problem that we have is permission to operate when we deem it necessary. As you all know, in an institution the person responsible for giving permission usually is hard to contact because he lives out of town. However, after trying by all possible means to get permission to operate without success and we find that it is absolutely necessary, we operate without permission; that is, as a life-saving measure. The administration of this hospital is absolutely against this practice except in very urgent cases.

The general condition of the patient is another very important problem in the state institution. Up to five or six years ago East Moline State Hospital had a great deal of pellagra and scurvy; however, the inmates at the present time have a very well balanced diet prepared by a dietitian. Feeding and proper care of a patient in an institution alone does not make the individual a good risk. As we all know, they are not active, they do not use their muscles, and I have noted that most of them do not bleed hardly at

Read before Managing Officers of Illinois State Institutions at East Moline State Hospital, East Moline, Illinois.

all following the initial incision and it is seldom necessary in an abdominal incision to put on more than two or three hemostats. In other words the tonicity of the patient in an insane institution is poor. The skin itself is often contaminated from excretions even though the patient is bathed regularly. This in itself would increase the risk of wound infection.

In this institution after the patient has been brought in and worked up by the residence staff we are called in and talk the case over, not only with the resident of the staff who has examined the patient, but also with the rest of the staff. We have a good frank discussion on what the patient might have and on his mental condition; and I insist in each case that every member say exactly what he thinks the diagnosis of the case is and what treatment he thinks is best. By this procedure I have found that I not only have the council of the older members of the staff as to the probable postoperative problems as far as the mental condition of the patient is concerned, but also it helps me teach the younger members of the staff surgical principles which they all are very eager to learn, especially in an institution where there is very little surgery done compared with the number of patients. In the old days the East Moline State Hospital used to have a surgeon that lived a long distance from the hospital who would come in once a month and operate in certain cases that the staff would bring up for surgery. This arrangment, obvious to everybody, was poor, not only for the staff, but for the inmates. It is pretty hard to have a consultant surgeon come a hundred miles to feel an abdomen to see whether it is necessary to operate, to say nothing of getting in touch with him to look after a postoperative complication; I believe it is absolutely essential that a state institution have its surgeon live near the institution so that he may act promptly in any emergency.

The postoperative care of an institutional patient has many pitfalls. The other surgeons who have written on this subject seem to have had very little, if any, trouble. This unfortunately has not been the case in my experience. It is true that is unnecessary in most cases to use much morphine as these patients usually are quiet for long periods of time with no narcotic at all. This however, does not mean that they do not have to be watched every minute. I will cite a few of our unfortunate accidents that will bring out this point. One day we operated on a patient that was jaundiced from a common duct stone. The stone was removed, a tube was put into the common duct, another tube was put into the gall-bladder which was drained, and a third tube was put in front of the gall-bladder. The same day we operated on a patient who had had a perforated intestine from eating bones. After using suction in her abdomen we put a drain tube in her cul-de-sac. Both patients got along fine. However, on the second day I called to see them and found that all tubes had been pulled out of both patients and, strange though it may seem, they both had uneventful recoveries, even though the patient with the common duct stone did drain bile for two or three weeks following the operation. This case made me wonder whether it is necessary in our private surgery to drain the common bile duct as long as we do. In another case in a chronic alcoholic we sewed up a perforated duodenal ulcer. He did well. However on the second night one of the patients near his bed gave him a big chew of tobacco which he promptly washed down with a 1,000 cc. of his Murphy drip. In another case we resected the cecum of a colored patient who had dementia praecox. The resection was necessary because of a thrombosis of the mesentery. I put a clamp on the end of the large intestine after cutting it off with the cautery and sewed a tube into the open end of the ilium. These were left out on the abdominal wall and the patient did fine for three days; the drainage was good and his condition was excellent. However, on that same day he got underneath his dressings, took hold of the clamp that was on the large intestines, and jerked the intestines out of his abdominal cavity. He died later from shock. If I had this case to do over again I would have done an anastomosis at the time of the operation and closed him up without drainage. I believe it is justified in an institution where an accident like this may happen, to take a little more risk in the first operation as far as the patient's life is concerned by doing the complete operation in one stage. Another case was a patient who had broken his shoulder following the shock treatment for dementia praecox. He had a fairly good functional result by putting his arm in an airplane splint. I did not believe an open reduction was indicated in his case; however, his family was not satisfied and he was taken into

Chicago where an open reduction was performed. While in Chicago, he picked his wound open with a lead pencil following operation. Of course, he developed a nice infection and at present he has an osteomyelitis, which has given him a much worse shoulder than if he had not been operated on.

Special surgical instruments are neeessary in certain abdominal operations, or at least it makes the operation easier for the surgeon. We have solved this problem by having our instruments sterilized at the Moline City Hospital, put in sterile trays, and sent out to the state hospital. In our East Moline State Institution we are gradually improving our surgical outlay under the able administration of the present officer in charge. However, in the state institution we will need a 100 m.p. x-ray and fluoroscopic table to study our intestinal pathology. We need an outside wire for coagulation as the power is not constant in this institution. We have a doctor who makes our slides for pathological study, but it is necessary in questionable cases to send the slides away for diagnosis. This, I think, can be remedied by having a local pathologist come to the hospital when necessary. The fracture apparatus in this hospital is not what it should be. We borrow what we need from the Moline City Hospital and then order the necessary equipment later on.

We have been fortunate in the last two years to have studied five cases of perforated intestines in the East Moline State Hospital and in my private practice. Three cases were at the state hospital and two were in private practice at Moline City Hospital. I will group these cases, as they are interesting because of their similarity. None of the five patients complained of sharp or excruciating pain at any time. None of them vomited. They all had rigid abdomens. In every one the tenderness was in the right iliac fossa and none of them had a blood count of over 11,000. They were all operated on. In all five cases there was no tendency to wall off the pathologic process. They all had a white milk-ish-like, free fluid in the abdomen. All of them had the perforation through the ilium within a foot and a half of the ileocecal valve. In four of them the bone was removed and the intestine sutured; in the fifth the appendix was removed and the perforation missed. This patient expired and at autopsy the bone was found halfway through the intestines. The other four had uneventful recoveries, one of the patients having pulled her tube out as mentioned above. These bones varied from a bone three inches long to a small triangular bone 1 cm. on the sides.

We have been treating tuberculosis surgically such as phrenectomy, massive collapse, etc., the same as is done in a tuberculosis sanitarium.

The question of hernia in a state institution comes up often. I believe that all hernias should be repaired in a state institution for the insane, not only because it makes it more comfortable for the patient to get around, in this way taking away any irritation that the hernia may cause, but it also takes away the possibility of a strangulation, which in these people usually is not found until it is necessary to resect a piece of gut. We have operated on three feeble-minded patients for inguinal hernia. The old timers in the institution claim that a hernia in the feeble-minded will not hold up, but in the three we have done the repair has not broken down, even though the staff physicians are constantly examining these patients.

The next subject that is all important in an institution for the mentally ill is to determine what good, if any, surgery does towards the improvement or cure of the individual's mental condition. I believe first that we can make a sort of general statement that any patient with any degree of dementia has less than two per cent chance of improvement by surgery. Under this we can list (1) dementia praecox; (2) general paresis; (3) alcoholic psychosis; (4) epilepsy. The high percentage of improvement following surgery in an institution, of course, is the manic-depressive patient, and that is usually found following pelvic operations in the female. We know that women who have pelvic lesions often have a well-marked chain of nervous symptoms varying to such an extent, if profound, that woman may be said to be insane, and it is the experience of every surgeon that the removal of the lesion in many cases is followed by the disappearance of the nervous and mental symptoms. We also know that certain insane are more susceptible to extrenal stimuli than normal individuals; therefore it is logical to believe that they are more susceptible to internal or somatic impulses and that if the source of the pathological stimuli were removed, we might hope for

improvement in the mental condition. It is known that coincident with the mental improvement there is a physical improvement; therefore, it is logical to believe that any procedure that improves the physical condition has an indirect effect on the psychosis. The following is a portion of a table taken from Taussig, in which the author has grouped together recoveries and improvements in female surgery and has added his own figures to the series:

Author Reporting Figures	No. Cases	Mortality	Improvement
Rohe	34	..	56%
Hobbs	173	2%	68
Henry	28	33	57
Mayo	60	..	16
Broun	242	2	18
Taussig	17	..	17
Gibson	100	1	17

It will be seen that the first investigators made rather fantastic statements, while there is a remarkable similarity in the results of the last four.

Goiters and psychosis is another interesting subject and one in which there are many pitfalls. In the Cleveland Clinic out of 2,286 cases of toxic goiter there were only 24 cases or less than one per cent that the psychosis was caused by a toxic goiter. The contraindications in a general way for surgery in a toxic goiter with psychosis are (1) history of insanity in the family; (2) delusions; (3) hallucinations. It is very hard to determine whether to treat the psychosis. I believe if there is a question at all it is better not to operate. In an institution you might get by with it; however, in private practice I have found to my great chagrin that it is not a smart thing to do. I would like to cite two cases to illustrate my point. One patient is in the state institution here now. Her name is Mrs. S., a dementia praecox; and another who has been in here is Mrs. B., a manic-depressive. Mrs. S. was a carpenter's wife. She came into my office and told me that she thought she was going crazy and that she had just seen five other physicians who had told her she needed her goiter taken out immediately. Her goiter was a toxic adenoma. Her basal metabolism was plus 16 and her pulse was 120. I did a thyroidectomy on her, and her physical recovery was uneventful. However, during her stay in the hospital she informed me that there was a woman in black walking down the hall with a barbed wire around her neck and that she came in and rapped on the radiator so that it disturbed her. I thought at first that she was joking and let it go at that. However, she steadily became worse and ended up in the East Moline State Hospital and a diagnosis of dementia praecox was put on her. This was after she was treated at least a month in the home. This case brings up another important point in the treatment of these individuals, and that is cooperation of the physicians in the state hospital with the doctors on the outside. This was before the present administration, when I went in and asked to examine my patient. I was very interested to know whether her general condition was improving. However, as I was looking at the chart in the hospital the chart was snapped out of my hands and I was told to leave the hospital, that they didn't need any outside help in the treatment of their patients. As a matter of fact I had made no suggestions as to the future treatment for Mrs. S. I am glad to say that the present administration gives whole-hearted cooperation with any physician on the outside who would like to examine his patient in the hospital, also who has any ideas how the individual patient might be improved. The other patient, Mrs. B., was a manic-depressive. She had lost her husband about three months before she came to me. She was very nervous, had exopthalmos, basal metabolism was plus 20, pulse was 112, and she had a marked tremor. She also stated that she thought she was going crazy. I did a thyroidectomy on her and the pathological report was Grave's Disease. However, about three weeks later I was called by one of her neighbors. She told me to "come quick." Mrs. B., had all the lights on in the house and she was yelling out of the window. I hurried up to her home which was in a very thickly populated part of town, and here was Mrs. B.. with her head out of the second story window, her house lighted up like a church, and she was yelling, hailing the second coming of Christ. There must have been fifty people around the house and if there is any question in any of the minds in the audience here how I felt, walking up the stairs with my grip in hand, they should be in the same position. This patient turned out to be a manic-depressive and she has had remissions when she has been all right mentally.

Brain surgery in the mentally ill, I believe, is accepted in (1) brain tumors; (2) brain abscesses; (3) brain trauma followed by Jacksonian epilepsy. It is questionable whether the

removal of the white matter of the frontal lobe in dementia praecox or destroying the white matter in the frontal lobe by injections of different drugs as they do in some foreign countries is advisable. We believe that the improvement that they get from these radical procedures is from shock. This may or may not be the same as the shock that is obtained from the Insulin treatment. However, the result seems to be the same.

The mortality following surgery in an insane institution seems to be a question for discussion. Most of the authorities claim that their mortality is no higher than it is in private practice. This conclusion we cannot agree with. Our mortality in our private practice in major surgery is about two per cent. Our mortality at the state hospital runs somewhere between 10 and 16 per cent. I have tried in a part of this paper to explain why the mortality is higher in an insane institution. It is significant however, to find that most of the statistics that are available are on female surgery.

In conclusions I am proud to say that in this hospital we are obtaining over 30 per cent autopsies, also that we have found the pathologic lesions in nearly all of our surgical procedures. We have had some mental improvements following surgery, but I believe that a great many of the improvements have been due to surgical shock and only time will tell whether the improvement is permanent. We have had some sad experiences as noted above, but at no time have I ever seen the patients neglected or treated roughly by any of the doctors or attendants in this hospital. I would like to add at this time that the managing officer of this hospital has obtained an eye, ear, nose, and throat specialist, skin specialist, lung specialist, genito-urinary specialist, and surgeon to look after the inmates. These men give freely of their time and knowledge and are as thorough when dealing with an inmate as they are in their own private practices. I believe that this is very important and a great advance over the old system of having the psychiatrist taking care of all diseases, and it gives the mentally ill just as fine treatment as he could get in a private institution—in many cases better.

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ELECTROCARDIOGRAPHY IN GENERAL PRACTICE

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I might preface my remarks by stating that I do not offer electrocardiography as a panacea for the diagnosis and prognosis of all cardiac ills. There is, as we know, in clinical medicine no so-called instrument of precision that is not infallible. Clinical findings and clinical values will always prevail; the various instruments serve only for the most part as confirmatory evidence. It sounds perhaps paradoxical, but nevertheless true that the more familiar one is with the electrocardiogram, the less likely does he have to depend upon it.

White[1] in a recent monograph on heart disease gives certain relative values to the various methods we have at our disposal in making a cardiac diagnosis. In his opinion he places the following relative values on each:

History Taking .....45 per cent.
Physical Examination .....35 per cent.

Electrocardiogram ..... 10 per cent.
X-Ray Examinations ..... 5 per cent.
Other Laboratory Tests..... 5 per cent.

For the sake of clarity and coherence, permit me to review certain fundamental physiologic principles of the heart. The heart is essentially a hollow neuromuscular organ with the following properties peculiar to it, viz.:

1. Contractility and tonus.
2. Irritability, i.e. the ability to contract or react to stimuli.
3. Conductivity very important in normal heart action and in electrocardiographic studies.
4. Rhythmicity and automaticity the ability of any part of the cardiac musculature to initiate contractions; this property varies in degree in different parts of the heart.

In regard to the above properties we might review the sequence of events occurring in a normally contracting heart.

The impulse for contraction in the normal heart arises in a specialized mass of cardiac muscle, the sino-auricular node or the Keith-Flack node (the pace maker) located in the right auricle at the base of the superior vena cava. From here the impulse is propagated over the entire auricular musculature until it reaches the auriculo ventricular conduction system. This system, which is the only definitely established muscular communication between the auricles and ventricles, consists of the A.V. node or node of Tawara located at the base of the interauricular septum posteriorly. The A.V. node and bundle bifurcates into a right and left branch whose fibers ramify extensively beneath the endocardium and into the myocardium. The S.A. and A.V. nodes are abundantly supplied with parasympathetic (inhibitory) and sympathetic (accelerator) fibers, the right acting predominantly on the S.A. and the left on the A.V. node.

Let us now briefly recall what occurs in a contracting muscle fiber. If two wires from a galvanometer are connected to both ends of a muscle fiber AB and this fiber is stimulated to contraction, a positive EMF is developed at A, whereas the electrical potential at B is negative and a current flows from A to B as indicated on the galvanometer, the muscle fiber then returns to rest, and while doing so a current is produced in the opposite direction. This is the so-called diphasic action current. This of course takes place in contracting cardiac muscle. It was this fundamental principle that led Einthoven to the development of the electrocardiograph with the string galvanometer.

Let us again recall another fundamental physical law, viz.: "A conductor conveying a current of electricity if suspended in a magnetic field will move at right angles to the lines of force of the magnetic field." The degree of movement is directly proportional to the strength of the current. With these fundamentals in mind, Einthoven constructed the first string galvanometer electrocardiograph consisting of:

1. String conductor of fine spun quartz plated with gold.
2. Electromagnet, within which the conductor was suspended.
3. A source of light to illuminate the shadow of the string.
4. A microscope to magnify it and camera, motor, timer and batteries.

This worked as follows:

Through the medium of electrodes attached to the body the conductor picked up the minute currents generated by the heart, and oscillation of the conductor was photographed on specially ruled sensitized paper. The conventional electrodal leads of #1 (right arm and left arm), #2 (right arm and left leg), and #3 (left leg and left arm) were used.

Today this is refined in some respects and the radio tube is employed to amplify the heart voltages. The high amplification obtained in this way makes possible the use of a rugged galvanometer. The rotating element of this galvanometer is mounted on a mirror which reflects the light from a high intensity incandescent lamp. Variation in the heart potential causes rotation of the mirror, thus displacing the beam on moving photo-sensitive film or paper. In this way is the electrocardiogram produced.

The vacuum tube amplifying type of eletrocardiograph with an appropriate galvanometer makes possible the faithful recording of the high frequencies present in the heart potential cycle. It has been shown by analyses of electrocardiograms at the Massachusetts Institute of Technology that these high frequencies constitute a significant part of the electrocardiogram. Hence the importance of using an electrocardiogram of the requisite sensitivity for recording heart potentials.

With what has gone before I think we can now intelligently draw up our definition of an electrocardiogram, viz.: "It is a photographic repre-

sentation of the electrical activity of the heart." Indirectly, this gives evidence as to the size and state of the cardiac muscle and conditions of the conduction system. E.G. large muscle fibers usually produce strong currents with high voltage; weak, degenerated and scarred muscle usually low voltage, etc.

Graphically this series of waves is represented in which the P wave represents auricular activity and the spread of the wave of excitation from S.A. node to auricles and A.V. node. The P.R. interval indicates the time for the conduction of the sinus impulse to the ventricular muscle; normally this being 0.12 to 0.20 second. The QRS complex represents ventricular activity, and the time it takes the impulse to traverse the ventricles, and normally should not exceed 0.10 second. T and RT segments represent further ventricular activity (recovery of ventricles). What, then, does the electrocardiograph have to offer to the general practitioner? In my opinion it is of greatest value in the following conditions:

1. *Cardiac Neuroses.* Here it is of value to aid in definitely ruling out organic heart disease and thus make psychotherapy of value. It is too often true that we as physicians many times are responsible for making mental cardiac cripples of neurotic patients. This happens because we have at some earlier date, because of such symptoms as seen in neurocirculatory asthenia, with dyspnea, fatigue and precordial distress, or because of an obscure functional murmur, labeled these people "heart trouble." Thus the electrocardiograph, in addition to negative clinical findings, can support the physician's statement to the patient that "you do not have heart trouble" and thus effect a cure.

2. *Infectious Condition.* It is of value especially in rheumatic fever, scarlet fever, diphtheria and chorea. Here the evidence of cardiac damage as seen in the electrocardiogram will lead the physician to promote a guarded convalescence. It is of value sometimes in diagnosis of obscure cases of rheumatic fever or chorea because in nearly all these cases there is a definitely prolonged PR interval very early, before any cardiac manifestations.

Levine[2] cites a case in his experience of a young boy with an acute abdominal condition suggestive of appendicitis, in whom he suspected an atypical rheumatic fever. An electrocardiogram showed a definite prolonged PR interval, and because of this a diagnosis of rheumatic fever was made, salicylates given and patient recovered.

3. *Early Myocardial Degeneration or Weakness.* The electrocardiograph is of great value here, especially when there are vague or very slight symptoms with few if any physical findings. On the other hand, not all cases of palpitation, dyspnea, chest pain and cough are due to the heart and in these cases the electrocardiogram is of value, for if it is absolutely negative it leads the physician to search elsewhere for the cause of the cardiac symptoms, such as pernicious anemia, gastro-intestinal pathology and chest conditions.

4. *Coronary Thrombosis.* Electrocardiograph is of untold value here, especially when cases are atypical, such as:

1. Very slight symptoms with relatively negative findings.

2. Those with acute epigastric distress to differentiate surgical abdominal conditions; a normal tracing does not necessarily exclude coronary involvement although in the past few years the use of additional leads beside the conventional three mentioned have indicated coronary involvement which would not have been manifest otherwise.

5. *Cardiac Arrythmias.* It is true that many of the arrythmias can be properly diagnosed at the bedside, but there are times when it is impossible and the electrocardiographic tracing is imperative. The electrocardiogram should be used in all cases of arrythmias, however, to confirm the clinical diagnosis and to determine whether or not there is organic pathology. It is of special use in diagnosis of such conditions as:

1. Recurring multiple extra-systoles from auricular fibrillation, or pulsus bigeminus from heart block.

2. Auricular flutter from auricular fibrillation.

3. Auricular and ventricular tachycardia and the other paroxysmal tachycardias.

6. *Hypertension.* Electrocardiographic findings before cardiac symptoms or findings are of value in determining whether hypertension has been present for some time and is likely to be serious or whether it is recent and possible transient.

7. *Valvular Heart Disease.* Here the electrocardiogram is not of much aid for diagnosis, but is of value in determining the amount of muscle damage, types of irregularities, if present, and other pathological changes besides valvular defects such as coronary involvement.

8. *Digitalis and Quinidine Therapy.* It is of

value here in determining early toxic effects of the drugs. For instance, in digitalis intoxication, before the classical clinical signs of the "puke, the purge and pulsus bigeminus," the electrocardiogram shows prolonged conduction time, depression of the ST segment with inverted T waves and tendency to ventricular extrasystoles.

Briefly, this gives you a bird's-eye view of some of the applications of the electrocardiograph in general practice and properly used is of great value to the clinician, whether he be general practitioner, surgeon, internist or pediatrician.

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CHLORINE DEATH POINT OF COWPOX VIRUS

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The death point of viruses to germicides differs from that of bacteria. The studies of Gordon[1] show that cowpox virus can withstand five per cent. phenol for one hour and glycerine or ether for months. Park and Williams[2] recommend the use of one per cent. phenol and 1 to 10,000 brilliant green dye as a vaccine preservative. Powell and Jamieson[3] demonstrated that merthiolate does not inactivate vaccine virus.

Herein are reported tests to determine the death point of cowpox virus to chlorine as used in drinking water. A period of ten minutes was selected for the tests, as this is the minimal time required for water to travel from the chlorinator to the nearest consumer in many community water supplies. Ten tubes of fresh commercial vaccine were pooled and one portion of vaccine was added to four portions of various concentrations of standardized chlorine water[4] at room temperature (25 C.). The vaccine was applied by multiple puncture method (thirty needle pricks) to the arm of an adult. The same experiment was repeated with cowpox vaccine diluted with ninety-nine parts of standardized chlorine water; and with vaccine which was diluted (1 to 50) with sterile water, passed through a Mandler candle, and then further diluted with standardized chlorine solutions to a final dilution of vaccine of 1 to 100.

TABLE 1

Results obtained 84 hours after vaccination with chlorinated cowpox virus.

		Chlorine, parts per million									
	Control	½	1	2	5	10	20	50	100	200	400
Vaccine 1:5....	X	X	X	X	X	X	X	X	X	X	X
Vaccine 1:100..	X	X	X	X	X	X	X	X	X	X	X
Vaccine 1:100*.	X	X	X	0	0	0	0	0	0	0	0

X, virus living; 0, virus dead; *, Mandler filtrate. Time of exposure to cholorine ten minutes.

The skin reactions were examined 84 hours after inoculation. Table 1 shows that the vaccine virus in dilutions 1 to 5 and 1 to 100 survived chlorine up to 400 parts per million for ten minutes. However, the Mandler filtrate survived a 1 p.p.m. chlorine concentration only.

DISCUSSION

Thousands of communities and millions of people depend on chlorine treatment of the public water supplies to safeguard their health. Chlorination is commonly believed to destroy all pathogenic germs. Hoover[5] states that a "residual chlorine represents a factor of safety and indicates that all organisms have been destroyed. The residual should be between 0.1 and 0.2 parts per million." That chlorine, as commonly used, protects only against the non-spore bearing bacteria was shown by Tonney and associates.[6] They tested the chlorine death point of 361 strains, comprising thirty-two species of the common bacteria; a large percentage of these strains were killed by 0.1 p.p.m. of free chlorine, in 15 to 30 seconds. None survived 0.25 p.p.m. *B. coli* stood out as in general the most resistant. Similar tests were also made on spore bearing organisms. One hundred and forty-two strains of seventeen species of spore bearing organisms were studied, which included the more important pathogens and non-pathogens of both aerobic and anaerobic types. The anaerobes required a range of concentrations from 1.0 p.p.m. for the least resistant, *Cl. welchii,* to 40 p.p.m. for a strain of *Cl. tetani.* The aerobes required a higher and wider range of chlorine concentrations, varying from 18 p.p.m. for *B. aerosporus* to 280 p.p.m. for a strain of *B. vulgatus.*

While cowpox or smallpox viruses are probably never conveyed by public drinking water, these experiments suggest that such a contamina-

tion could survive present methods of water purification. The susceptibility of the Mandler filtrate to chlorine suggests that cowpox virus may exist in two conditions, (a) a non-filtrable and chlorine resistant, and (b) a filter passing and chlorine sensative.

CONCLUSIONS

Cowpox virus treated for ten minutes with free chlorine solutions was not killed by several hundred times the concentration usually considered adequate to protect public drinking water supplies.

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ETIOLOGY OF SENILE CATARACT

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CHICAGO

Taken as a whole, senile cataract is a most serious disease and to date is still very formidable in the causation of total blindness. Books on ophthalmology have generally been encyclopedic about such cataract and its cause or causes, or have entirely omitted a comprehensive description of true fundamental knowledge on the subject. However, from time to time one reads about experimental studies in the medical press, including many variated chemical tests, but thus far these observations have been unsatisfactory. Postmortem observations will hardly bring about a solution as to the cause of this type of cataract. Why?

Because it would seem from all outward manifestations, as well as common sense, that a cataractous lens must be studied on the living subject in its relation to its anatomic-physiological function—to its anatomic-physiological mechanism. Physiology advances the idea that lenticular cataracts are brought about by a peculiar coagulation of the albuminous substance in the lens, but does not explain why such coagulation occurs during a certain period of life, nor do we learn from physiology the reason for this process of coagulation. Also, the metabolism and nutrition of the lens seem confusing to many.

A writer, Brav (Medical Record, Nov. 17, 1937), states: "The problem of lens metabolism has as yet not been solved and is still within the domain of speculation. How is the lens nourished? The lens, having no lymphatic channels, no vascular supply and no direct nervous system, cannot really have a true metabolic arrangement. Active metabolic processes would imply a physiological wear and tear and a carrying off of waste products resulting from such metabolic changes. There are no channels, however, that can carry such waste product from the lens into the circulation."

The same author further states: "Some physiologists assert that there is a wear and tear, that the waste product is not carried off, but attaches itself to the nucleus and becomes compressed and thereby increases the size of the nucleus. The lens having no active action to perform probably requires no food. Its growth, which is practically imperceptible, is due to a highly specialized vital force inherent within the lens substance itself. The lens is an autotrophic self-nourishing body. It must have an autogenic vitalizer, produced by the heat which results from the constant friction or movement of the lens in response to the accommodative demand and by constant radiation of light. The chemical changes noted in cataractous lenses have really developed in the lens after the opacification sets in and are not the primary cause for the development of cataract."

Aside from the above theory concluded by the above writer, he stresses principally the refractive error and the phenomenon of accommodation as chief causes in senile cataract—a fact long ago stated in connection with such theories by various writers and observers in our literature on ophthalmology.

So, believing as we do, that a lens must undergo some metabolic processes and must be nourished as well as any other part of the body, though the manner and mechanism of method

may be a somewhat disputed fact, we believe also that some chemical change of a toxic or allergic nature is produced in the body (rheumatism, gout, syphilis, albuminuria, diabetes) which will bring about alterations to the ciliary body and the canal of Petit, with its resultant trauma to the lens capsule and, of course, refractive changes and opacification due to these alterations and diminished or lack of nutrition and sclerosis.

It is noteworthy to mention here that errors of refraction may at best be the effect of sclerotic changes in the lens and not its cause; that it would seem that the capsule is transparent and elastic enough to withstand regular functional processes; that it would hardly seem possible that the lens capsule would sustain trauma by its regular functional processes, regardless of the individual's age, providing no pathological, toxic-chemical or allergic substances would alter and affect the ciliary body, the ciliary processes, the choroid, the capsule and the zone of Zinn with its canal of Petit.

Then in connection with statements made by authors that trauma produced by hyperactive accommodation and uncorrected refraction is a principal factor in the formation of senile cataract, cases have been known where many individuals who wore the properly refracted glasses since their early youth and who had check-ups every year or two, became cataractous after the age of sixty. As to heat and irradiation in such cases as, for instance, glass blowers and bakers, we have rather a pitiful and non-scientific as well as a meager recording on the matter, for, even among bakers and glass blowers, cataracts are rare before the sixtieth year.

REPORT OF THREE CASES

Case 1. Mrs. M. B., aged 60, mother of a physician, had been under observation for about ten months; stated that she wore glasses for the last twenty-five years: she believed she wore the properly refracted and fitted eyeglasses during that time; she had check-ups every year or two; her health was fairly good except she was troubled with rheumatism of her extremities from time to time. When she reached the age of sixty she began to complain of blurred vision in her left eye. Ophthalmoscopic examination showed an incipient catract (December, 1938). Patient is still under observation.

Case 2. Mrs. I. A., aged 63, whom I had operated upon for senile catract in the right eye in March, 1939 at St. Mary of Nazareth Hospital, gave a similar history as above case. Her heart and lungs were normal; she suffered from no disease or disturbance outside of a certain amount of rheumatism in her extremities. She wore glasses for many years—properly refracted and fitted to the best of her knowledge; she had check-ups on her refraction from time to time. When she reached the age of sixty-two she began to experience a certain amount of blurring in the right eye. A year later, when she consulted the author, she was completely blind in her right eye. Ophthalmoscopic examination revealed a ripe senile cataract.

Case 3. A woman aged 68 whom I had operated upon for senile catract in April, 1939 at St. Mary of Nazareth Hospital, gave a similar history—a history of good health except a slight tendency to rheumatism. Wore glasses—proper eyeglasses for many years; never experienced "eye trouble" except when she reached her late sixties.

To appreciate more fully the probable etiological factor of senile cataract (theory), a brief description of the human lens, with emphasis on certain phases of the anatomy and physiology, is in order.

SUPPORTIVE ANATOMICAL DATA OF THE HUMAN LENS

The crystalline lens is a biconvex transparent body measuring about five mm. in thickness and about nine mm. in diameter, situated in the anterior portion of the eyeball between the aqueous and the vitreous chambers. It is surrounded by a transparent capsule and held in position by a so-called ligament known as the suspensory ligament or zone of Zinn. In the adult lens we note a peripheral portion or cortex, and a central portion, the nucleus. The cortex is semi-solid in consistency and colorless; the nucleus is somewhat harder and has a yellowish tint. The nucleus generally increases in size with advancing years and the cortex diminishes in proportion; this change is known as sclerosis. In structure the lens consists of concentric layers formed of long, hexagonal fibres, the edges of which are connected by a transparent substance of cement-like consistency, leaving fine lymph channels. It is devoid of blood vessels except in fetal life—its nourishment being derived, according to some, from the ciliary body (important to remember).

The capsule of the lens is a highly elastic, thin, homogeneous membrane which surrounds the lens, being known as the anterior capsule in front, and as the posterior capsule behind. The front capsule is the thicker and its posterior

surface is lined by a layer of cuboidal epithelium from which the lenticular fibres are formed. The zone of Zinn is a delicate membranous structure extending from the ciliary body to the capsule. It surrounds the inner surface of the ciliary body from the orra serrata to the apices of the ciliary processes and then proceeds to the lens, dividing into three layers attached respectively to the anterior capsule, the equator and the posterior capsule. Between these layers and the equator of the lens an annular space one-tenth of an inch wide, triangular on section, is found and known as the canal of Petit; it communicates with the posterior chamber by means of slit-like apertures between the fibres of the anterior portion of the suspensory ligament or zone of Zinn. Some anatomists state that between the folds of the suspensory ligament or canal of Petit we find a fluid supposed to assist the nutrition of the lens (of immense importance).

Physiologically considered, the lens plays an important role in the act of accommodation, only in a passive manner; its physical mechanism depending entirely upon the normal, healthy function of the ciliary body and ciliary muscles. The lens is devoid of direct connection with the nerves of accommodation. To keep the lens transparent and elastic, nature has surrounded it with a remarkable transparent capsule to protect the lens against the entrance of fluids or against the actions of the more common infections from the anterior segments of the eye. In fact, we often find the aqueous involved in iritis; we find pus in the anterior chamber without any damage to the anterior capsule; but very rarely do we see the rupturing of the capsule from without and involving the lens (except in physical trauma).

In conclusion, may I state that the foregoing opinions are submitted as a working theory and that as such are open to criticism or adjustment to practical facts and with a view of further study and observations in the clinical rooms.

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RECTAL GONORRHEA

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The ordinary case of gonorrhea in the female should be regarded as a gonococcic infection of the urethra, cervix, and *possibly* the rectum. This is necessary, as so many of the women have rectal gonorrhea; in the male it is unimportant. At present the uncomplicated case of female genital gonorrhea is thought of as an infection of the cervix, probably of the urethra, and possibly of Bartholin's glands. The rectum is rarely considered. The triad: cervix, urethra and rectum should be borne in mind. And these sites indicate respectively the tissues most frequently infected.

The presence of the rectal infection has attracted but little attention in this country until recently, although foreign literature has recognized its importance in the last decade. There is general agreement among continental authors that it is a common concomitant of gonorrhea in women, that the incidence is high (15% to 85%), that it is easily overlooked and that the gonococcus can retain its virulence in the rectum for more than a year. One looks in vain for an informative consideration of the matter in any of our textbooks on gynecology or venereal disease. If it is mentioned at all, it is generally stated to be a self-limited disease.

Bickel and Abraham[1] state that in 15 cases, if histories as given by the patients are accepted as correct and reinfection ruled out "even after gonorrhea of the genitalia has remained cured for more than ten years, gonococci may still be found in the rectum." Clements and Hughes[2] in their valuable report mention seven cases suspected of gonorrhea for various reasons, which had rectal infection and in which no gonococci were found in the secretions of the urethra and cervix. Ten of 59 cases of Brunet and Salberg[3] examined after intervals of six months to two years were found to have gonococci present. Certain it s necessary to avod exaggerating the importance of rectal gonorrhea, but with equal certainty it is necessary to establish

its proper status and having this generally known.

Rectal Gonorrhea in the Male. The disease is rare in men. De Bere[4] found it in a little over 2% of 220 men having gonorrhea in a Chicago penal hospital, where a relatively high incidence might be anticipated. Stühmer,[5] who unintentionally conveyed the infection from one to twenty-five others by an infected glove, describes a much more severe type of proctitis than is ordinarily seen. This may have been an unusually virulent strain of gonococci. Two of the most severe cases I have seen were in men, but there is no general agreement that the gonococcus causes a more severe inflammation in the male rectum.

Rectal Gonorrhea in Infants. The rectal infection in infants is of consequence in hospitals and institutions where a single case may cause a widespread disease. Byfield and Floyd[6] have reported the "relation of gonorrheal proctitis in male infants to epidemics of vulvovaginitis" and cite the dangers of reinfection by discharges on diapers and on tables on which the children are seated while being bathed and dressed. Bloomberg and Barenburg[7] have reported gonococcic proctitis as a cause of blood and pus in the stools of infants and call attention to the danger of the "latent" case. Rectal infection as a complication of vulvovaginitis in children is rather generally known. It has received attention in the literature especially in Europe; nine authors report an incidence of from 35% to 84.6%. Rectal involvement is more frequent in children than in women, on the basis of these statistics.

Rectal Gonorrhea in Women. The following is a summary of data and conclusions made in a study of 110 cases of gonococcic infection of the rectum in women having genital gonorrhea and previously reported.[8] Brunet and Salberg[3] have since reported 250 cases and gave an incidence of 42%, and Clements and Hughes reported 69 in 169 cases of female gonorrhea (33%), in which both smears and cultures were made using McLeod's and Gordon's oxydase reaction[9] to identify the gonococci colonies.

In my series a positive rectal smear was obtained by a cotton-tipped applicator passed through a Kelly urethroscope, a proctoscopic examination made later and smears made as a check on the former test. Gram negative intracellular diplococci in a field of 25 or more pus cells was regarded as proof of gonorrheal infection. A single negative smear does not always exclude the infection.

In women gonorrheal proctitis is ordinarily secondary to genital infection. The anus is contaminated by the infective vaginal discharge at defecation and the subsequent wiping. Other means are occasional factors but contamination at defecation is the usual one.

Symptoms. The outstanding fact is that usually there are few or no symptoms and but little if any evidence of gonococcic infection of the anus and rectum. This needs emphasis. Even to one making daily examinations of the rectum, the changes are usually slight if any are to be seen. Jullien's[10] dictum that "gonorrhea is a disease one sees only if one looks for it" is particularly true here. In one series of 88 cases investigated in 1931 only 12 (14%) presented any rectal complaint and 86% were symptomless.

To elicit any complaint direct questions are necessary. In 111 cases examined with the proctoscope, thirty-six (32%) on direct questioning stated that they had anal soreness, usually at defecation, only moderate generally: two patients were quite sore; and six had fairly severe pain, three of whom had anal fissure.

Slight *bleeding* was present in thirty-two (28%). Usually this was just a drop or two, or a streak on feces or a stain on paper. Several patients noticed blood only two or three times. The normal incidence of hemorrhoids in this group must be considered in this relation. The bleeding usually is noted a few days after or may accompany the onset of the rectal infection in a few cases it followed in a few weeks; in one, a month later.

The majority noticed their rectal soreness or bleeding within three weeks of the onset of the genital infection but several had no trouble until after the first month, some not until two to seven months later. In about a third the rectal infection occurs within the first few days of the genital disease, in another third in the first three weeks, and in the remaining third at various times up to several months after the initial infection.

Pus or mucopus occasionally may be seen on partial eversion of the anus by stretching the skin with the fingers but it is not seen often enough to be of any diagnostic value. Even if

present it is not often noted by the patient because it is small in amount.

Physical Findings. The evidences are few or absent. In a careful proctoscopic study of the 111 cases referred to there is no appearance of the rectal mucosa or anal canal which is characteristic of gonococcic infection, and no change in the crypts or elsewhere which is either pathognomonic or especially significant. In well over two-thirds of the cases there is no definite hyperemia of the mucosa. In 28% the terminal 6 to 10 cm. of the rectum was reddened. In two-thirds of our cases there was some, usually slight, reddening of the skin margin at the mucocutaneous junction. Mucopus, generally small in amount and often found as flecks or strings adherent to the bowel wall, was noted in seventy (63%); yellow liquid pus was seen in only six cases and was distributed over the last inch or last few inches of the rectum. I still feel this deserves emphasis: The presence of mucopus in the last inch or two of the rectum is the most suggestive finding in the diagnosis of gonococcic proctitis. It may be the only suggestion toward a diagnosis in a patient who states she does not have gonorrhea or its symptoms. In the ordinary proctoscopic examination this finding demands the examination of a smear. If in addition the skin at the anorectal juncture is reddened, a smear is even more definitely required. In the women who have a known genital gonorrhea obviously a smear should be made.

Diagnosis. The disease is consequently diagnosed not by physical findings but by bacteriologic evidence. Smear examinations will suffice in the majority of cases and this is a simple and practical method of diagnosis. However, cultural methods will pick up a definite number which would otherwise be missed. The work of Clements and Hughes, previously cited, gave the following results: Of 240 parallel tests (smear and culture) in 42 (17.5%) both smear and culture were positive; in 28 (11.7%) only the culture was positive and in 11 (4.5%) only the smear.

The course and treatment can be covered briefly. I have no doubt that it is often self-limited. But if it occasionally persists even in patients who have been treated as Brunet's figures show, it is probable it persists more often in undiagnosed and untreated cases. That it does persist at times for long periods is proven.

Considering now the usual course, an acute early phase may occur but that it is often absent is evident. The course is ordinarily slow, often of several months duration, but cure may follow adequate care in three to six weeks. Several weeks to months is probably the usual duration as many patients discontinue treatment before being cured.

The disease is a potential source of genital reinfection. Temesvary[11] states this does occur; Bickel and Abraham, that it occurs only rarely. My own opinion confirms that of the latter authors who state that "the significance of rectal gonorrhea lies in its being a possible source of infection of the genitalia." In itself rectal gonorrhea is usually not serious in the white races; in exceptional cases it may cause a stricture. Chronic inflammatory stricture is more common in negroes; some of these cases may be the aftermath of gonococcic infection but most of them are the result of lymphopathia venerea.

In the 111 cases, three had superficial fissure. Perianal suppurative disease was found in three cases, two had fistulas and one a short sinus communicating with an inflamed fibrosed crypt. In four cases the mucosa of the terminal rectum had a nodular surface, i.e., the early polypoid change which may result from chronic mucosal infection. Superficial erosions in small spots 1-2 mm. in diameter were observed in the mucosa just above its junction with the skin in four instances. Thus associated lesions were not frequent. No rectal or anal ulcers were encountered. Although a number of these cases were examined very early in the course of their genital and rectal infections the very severe cases described by some writers were not observed.

Treatment. Various procedures have been recommended for the management of the acute stage, e.g., rest in bed, a bland diet, hot sitz baths, anal douches, local medication and avoidance of instrumentation. However, the disease is not often seen in this stage. The patients in this series were treated by rectal instillations per catheter of 1 oz. (30 cc.) of 5% mild silver protein twice daily. If anal soreness was marked an ointment or suppository containing an anesthetic was employed. The bowels were regulated to avoid hard or liquid stools. Brunet uses a 2% silver proteinate cocoa butter suppository, prescribed after bowel movement and on retiring. This has proved quite effective and satis-

factory. Clements and Hughes used acriflavin irrigations with good results. Irrigating the anal crypts with a metal hook tip, freezing with ethyl chloride, and needless instrumentation should be avoided.

The patients having anal fistula were operated upon when the disease was chronic but while smears were still positive. The wounds healed normally.

CONCLUSIONS

1. Gonococcic infection of the rectum is a common complication of genital infection in women.

2. Because symptoms are mild and often absent, frequently the lesion is not diagnosed.

3. Urethra and cervix may be reinfected from a rectal gonorrhea.

4. Routine rectal smears should be made of all women with genital gonorrhea. Repeated smear examinations are necessary for diagnosis.

5. Complications are infrequent.

6. Treatment should be conservative.

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OVARIAN PREGNANCY

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Ovarian pregnancy, although considered by most writers to be more common than is realized, is still a very rare condition. In reporting a case it is always desirable to restate the criteria as set down by Spiegelberg:

1. The tube on the same side must be intact.

2. The fetal sac must occupy the position of the ovary.

3. It must be connected with the uterus by the utero-ovarian ligament.

4. Ovarian tissue must be found in the sac.

Conforming strictly to these criteria, Wollner[1] was able to find only eighty-seven cases in the entire medical literature up to 1932, of which forty-eight were definite. Since that time numerous cases have been reported, but most of them fail to include incontrovertible proof of the pregnancy being primary in the ovary. A search of the American and English literature from 1933 to the present disclosed seventeen reported cases, of which but four conformed to Spiegelberg's criteria from the evidence reported,



Fig. 1. Photograph showing fetus with placenta in situ on white background. (A) Amniotic cavity containing blood clot. (B) Ovarian tissue interspersed with organized clot surrounding cavity.

namely, those of Spackman,[2] Hyams,[3] Dodek[4] and Kanter.[5]

The case here reported must be added, we feel, not only because of its conformation, but also because of the unusually excellent specimen

with fully formed fetus. (See accompanying photograph.)

REPORT OF CASE

Mrs. C. Z., a white woman, aged thirty-six, was first seen in consultation April 28, 1938 complaining of excessive and frequent "menstrual" flow for the last three months. Family history disclosed three brothers and three sisters living and well, her mother living and well at the age of sixty-four, and that her father had died at sixty-three of heart disease. There was no history of familial disease. Patient had been married two and one-half years, had had no previous pregnancies, and had never employed contraceptives. Her past history revealed no serious illnesses, injuries or operations, except an appendectomy nineteen years ago. Venereal history was negative. The onset of her menses was at the age of sixteen, her periods were always regular, and the amount of flow average, until two months ago, since which time she had been flowing for two to three-week periods, with frequent passage of clots. She also complained of low back pain, made worse by exertion, since onset of menorrhagia.

Physical examination revealed the following positive findings: Blood pressure 130/90, pulse 96, temperature 96.8, respiration 20. There was a mass low in the midline, and on pelvic examination the uterus appeared enlarged three times its normal size. The adnexa were not distinguished. The laboratory reported her white blood count 10,300 and hemoglobin 65 per cent. Her urine was contaminated with blood from vaginal bleeding. A tentative diagnosis of uterine fibroid was made, and pelvic exploration advised.

At operation a mass 9x7x7 centimeters was found to occupy the position of the right ovary. This had an intact right fallopian tube wrapped about it and was adherent to surrounding structures. The mass was excised, accompanied by marked bleeding which had to be controlled with mass ligatures. The wound was closed without packing or drains. A urine specimen obtained at the time of operation, by catheter, gave a positive Ascheim-Zondek test. Postoperative course was entirely negative, as have been subsequent follow-ups, except for complaint of occasional low backache following protracted periods of standing (patient works in a bank).

Following is the report of H. D. Palmer, M. D., pathologist of Rockford Hospital:

Left ovary and tube.

Gross Description: The specimen is an irregularly but roughly oval-shaped mass which measures 9x7x7 cms. and weighs 337 gms. It is dark purple-red in color. The irregularities in contour are due to rounded areas of hemorrhage beneath an external serous membrane. At one extremity this membrane is ragged and torn, giving the appearance of having been detached from some other structure. On cross section the central area contains a typical amniotic sac 2.5 cms. in diameter, filled with bloody fluid and containing a fetus 7 mm. in length. The cord is still attached both to the fetus and to the amnion. The wall surrounding this sac measures from 1 to 1.5 cms. in thickness and presents wide areas of hemorrhage separated by gray tissue. The tube is stretched over one surface of this mass and measures about 1 cm. in diameter.

Microscopic Description: The sections present blood clot containing a number of chorionic villi, only a few of which are viable. The wall of the mass has the structural characteristics of ovarian tissue. It is markedly disrupted by hemorrhage.

Diagnosis: Ectopic gestation (ovarian).

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REGIONAL ILEITIS

With Report of Three Cases

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In contrast to appendicitis, which is now universally recognized as a surgical disease, the clinical entity commonly referred to as regional ileitis (Crohn's disease) represents a moot problem. This is evidenced by the diversity of opinions held not only by internists but also by a number of surgeons. The reason for this must be sought in the fact that regional (segmental) inflammation of the terminal ileum was discovered only recently, and that the observations recorded in the literature are not sufficiently numerous nor exhaustive to permit definite conclusions to be drawn. Under the circumstances it is felt that the presentation of the following three cases may add to our knowledge of this affliction. It may not be amiss first to review as briefly as possible the present-day concepts of its pathologic and clinical aspects.

PATHOLOGY

The lesion, described by Crohn in 1932, and confirmed by Oppenheimer and others later, was originally considered to be in the nature of an inflammatory condition of the terminal end of the ileum with multiple ulcerations and nonspecific granulomata, and only recently has been recognized as a disease entity involving not only the terminal ileum but also other parts of the ileum, jejunum, and even the colon, especially the cecum and ascending colon. It is further characterized by various skip-areas, so that one portion of the bowel may be perfectly normal, while two to six inches distant there may be

another inflammatory lesion. The disease may be acute, sub-acute, or chronic. The most common complication is a tendency to form fistulas which may terminate anywhere within the abdomen, perforate into various loops of bowel, the ischiorectal fossa, vagina and the like.

The histologic picture is that of an *acute inflammatory* process of the intestinal walls, involving all of the layers of the bowel, which become swollen and enlarged to one and one-half times the original size. The normal color is changed to a dull, lusterless, reddish gray, and the consistency simulates that of a rigid garden hose. The mucous membrane reveals irregular areas of ulceration and necrosis. The corresponding portion of the mesentery is thickened, edematous, and contains large, soft, hyperplastic lymph nodes. A variable amount of free fluid is usually present in the peritoneal cavity at this stage.

In the chronic or more advanced cases, the picture is entirely different, representing a chronic inflammatory process in the mucosa, submucosa and muscularis, with thickening of all the layers of the gut, and subsequent narrowing of the lumen. The contracted bowel begins to show evidence of obstruction within the ileum and the cecum, and may be associated with mesenteric abscesses and fistulas.

SYMPTOMATOLOGY

Regional ileitis most often simulates acute appendicitis, the striking symptoms being pain, cramps, a temperature of 99 to 101 F., leukocytosis, tenderness in the right lower quadrant, and the like.

The clinical picture is not always typical nor constant. At first, the only symptoms may be pain and diarrhea, which may last for a day or longer, resembling those of acute enteritis. Other patients may have periodic attacks of pain and diarrhea, with various amounts of mucus, pus, and blood in the stools. Still other patients may reveal an insidious onset, with signs of obstruction, pain, vomiting and distention. There are many variations, such as pain and vomiting, associated with chills and fever; or no pain, vomiting or diarrhea; in some instances the first sign may be a spontaneous fistula, which is strongly suggestive of the disease.

DIAGNOSIS

The diagnosis is made by the history of repeated attacks of pain usually predominant in the lower right quadrant, or along the ileum, associated with diarrhea, bloody or mush-like stools, attacks of chills, fever, nausea, mild leukocytosis and a variable degree of anemia, and the formation of fistulas in the abdomen or elsewhere. The diagnosis becomes more positive if x-ray examination reveals the string sign. Sigmoidoscopy rules out lesions of the colon as such (ulcerative colitis, tuberculosis, syphilis). In the chronic cases a palpable mass may be felt in the right lower quadrant which in the very young is almost impossible to differentiate from intussusception. In the event of perforation, abscess, generalized peritonitis, or fistulas may develop. These fistulas may communicate with the abdominal wall, the adjacent parts of the intestines or with other viscera.

DIFFERENTIAL DIAGNOSIS

It is difficult at times to differentiate regional ileitis from ulcerative colitis, as both have frequent intestinal disturbances and mucous bloody stools, though ulcerative colitis usually is characterized by more blood, while ileitis reveals more mush-like stools with mucus and blood, but this differentiation is merely a relative one. Both affections have exacerbations, remissions, and in both the bowel becomes thick and hose-like in shape. Both are resistant to treatment. A valuable aid in ruling out ulcerative colitis, when the disease is confined to the descending colon, is sigmoidoscopy. As was already alluded to, in the subacute and chronic types of ileitis when the disease involves the terminal loop of ileum, the x-rays show the characteristic string sign of Kantor.

Tuberculosis of the ileocecal region is the most difficult lesion to differentiate during laparotomy. It is very difficult in many cases to make a differential diagnosis between ileitis and ulcerative colitis, since ileitis does not exclude involvement of the colon, which accounts for the reason why some observers regard it as another form of ulcerative colitis. Very often the acute stage simulates an attack of appendicitis, and many normal appendices have been removed only to terminate in a permanent fistula, acute or chronic obstruction, generalized peritonitis, or even death. The diagnosis is difficult when an attack simulates acute appendicitis with perforation producing a pericecal abscess, as took place in one of my cases. However, this mistake should not occur, as the history usually reveals

that prior to the present attack the patient has had frequent intenstinal disturbances over a period of months or years, with frequent blood or mushy bowel movements, associated with vomiting, pallor, and loss of weight. If the patient happens to be a young adult with the above history and signs or symptoms suggestive of appendicitis, one should suspect this disease. Again, if a so-called appendiceal or cecal abscess appears in a patient having undergone appendectomy, and the patient still complains of attacks of pain and vomiting, that is to say without being freed from his symptoms by the removal of the appendix, ileitis should be suspected. It has been emphasized that in fifty per cent. of the cases requiring further surgical intervention for this disease the appendix has been removed without relief from the former symptoms.

In a considerable number of cases after surgical intervention there is a period of symptomatic relief, regardless of the nature of the surgical procedure, be that an appendectomy, a short-circuit operation, or even a mere exploratory laparotomy. This is unfortunate because the temporary feeling of well-being has given rise to the impression that spontaneous cure is possible. As a matter of fact, failure to observe these cases long enough or, in some cases, the freedom of symptoms for several years, does not preclude various complications and recurrences of the disease, while still others may die from causes other than the disease itself, or seek aid elsewhere. Study of the histories of many of these cases shows that remissions occur, regardless of treatment. In the obstructive type, a bland diet will temporarily give some relief, while a high residue or roughage diet will aggravate the obstructive symptoms. Since the disease is characterized by variable periods of remissions, and is often temporarily relieved by a bland diet and aggravated by a high residue diet, it is to be expected that in many cases a period of improvement follows almost any surgical procedure. Many inflammatory lesions of the bowel improve under a regime of starvation, rest, and bland diet, which usually precedes and follows a major surgical operation.

COURSE AND PROGNOSIS

There are reports that the disease may lead to a spontaneous cure, but usually it becomes chronic, with the tendency to perforation and death from generalized peritonitis or the formation of permanent fistulas.

TREATMENT

The treatment of the acute, subacute, or chronic type of this disease is excision of the entire diseased area. Whether it should be carried out in one or more stages depends upon the general condition of the patient and the character and the extent of the lesion, but the treatment must be radical removal. One must not overlook the so-called "skip-areas," and at least six inches of normal bowel should be included in the radical resection, otherwise recurrence is certain to follow.

There can be no controversy about radical surgery in the *chronic* obstructive lesions with or without fistula formation. Some surgeons have recently advocated a short-circuit operation, but this affords only temporary relief, does not remove the pathologic process, and does not prevent complications and the spread of the disease.

In the *acute* or *subacute* type the surgeon is confronted with an acute inflammatory condition of the terminal eight or ten inches of the ileum, showing that the condition is not acute appendicitis and rendering a decision difficult. The procedure should then not be restricted to appendectomy, as this is likely to be followed by a fecal fistula, a chronic stenotic lesion or perforation. It is wholly fallacious to return the diseased ileum into the abdomen after an exploratory laparotomy, as a resection of all of the diseased ileum and cecum should be performed at this time, if at all possible. It is only when the condition of the patient does not permit such a radical procedure that a transverse ileocolostomy may be performed as a first stage, to be followed a short time later by resection of the diseased ileum and cecum.

Certainly the cumulative evidence speaks decidedly against any form of conservative management, except as a temporizing measure when there are decided contraindications to any radical intervention.

CASE REPORTS

Case 1—M. S., a school girl, sixteen years of age, admitted on my service at the Edgewater Hospital on July 26, 1933 by her family physician with a diagnosis of appendiceal abscess. The patient stated that on the day of her admission she was seized with a severe pain and cramps in the right lower quadrant with nausea and vomiting.

On admission, the temperature was 103 F.; pulse

130; white blood count 25,000 with 90 per cent. polymorphonuclears. Tenderness and rigidity was present over the right lower quadrant and a large mass about the size of a grapefruit was easily palpable. Owing to the serious condition of the patient, the usual conservative management was instituted—Fowler's position, ice bags to the abdomen, nothing by mouth, saline and glucose infusions. After several weeks of localization, the abscess was drained. The patient left the hospital two weeks later greatly improved, but with a discharging sinus. The sinus failed to heal and the patient continued to have attacks of pain in the right lower quadrant, associated with vomiting and frequent bloody stools. In questioning the patient further at this time, she admitted that she had been suffering from these cramp-like attacks of pain for four years prior to her entering the hospital, and had lost considerable weight. It was at this time that a diagnosis was made of perforation of a regional ileitis simulating an appendiceal abscess. After a short period the patient developed a second fistula, which opening was just above the left of the umbilicus. The fistulae were injected with iodized oil, and x-rays revealed their extension into the region of the terminal end of the ileum.

The patient reentered the hospital November 21, 1933, when an attempt was made to relieve her of the obstructions, and to dissect out the fistulae. At this time, the exploration revealed the following: A large indurated mass about the size of a large orange involved the head of the cecum, a sinus extended down to the terminal ileum, which was thickened and hose-like in appearance for a distance of twelve inches. The sinus extended above the umbilicus and ended about sixteen inches from the ileocecal valve, at which point a perforation had produced a secondary obstruction. The sinus was resected together with this portion of the ileum and an end-to-end anastomosis performed. Because of the patient's poor condition, nothing further was done. She left the hospital two weeks later much improved.

Pathologic Report: The ileum is intensely congested, 30 centimeter long; the mucosa intensely engorged. Wall hemorrhagic. Portion of omentum is included. Microscopically the mucosa is ulcerated, the wall densely infiltrated with polynuclears.

Pathologic Diagnosis: Acute inflammation of the ileum (ileitis).

The patient reentered the hospital June 26, 1934, still complaining of cramps, attacks of vomiting, bloody stools, distention and other signs of intestinal obstruction, which were confirmed by x-ray examination. Under ethylene anesthesia a wide resection was made of the ileum, cecum, and a portion of the ascending colon and ileocolostomy performed. Because of the patient's poor general condition, and the presence of massive adhesions, it was not considered wise to resect the ascending colon, though it appeared indicated. She was given a blood transfusion, her condition improved, and she left the hospital after two weeks with no discharging sinuses, and with no evidence of intestinal obstruction.

Pathologic Report: Portion of ileum and cecum consist of an indurated mass about 8 centimeters in diameter. The sinus extends to the ileocecal juncture; the terminal ileum is stenosed admitting a small finger; the ulceration extends at the ileocecal juncture for 4 centimeters; an ulcer 2 by 1 by 1 centimeter being at the base of the juncture. The appendix is 8 centimeters by 8 millimeters in diameter; no ulceration. The wall of the ileum is markedly thickened.

Microscopically, the ulcer is lined by granular tissue; submucosa and muscularis are thickened and densely infiltrated with plasma cells; few polynuclears.

Pathologic Diagnosis: Chronic inflammation of the cecum and ileum with ulceration.

The patient was kept under constant observation for three years, during which time she gradually developed a stenosis at the site of the stoma because an insufficient amount of the ascending colon as well as of the ileum was removed during her last operation. She was prepared to enter the hospital for a further resection and relief of her obstruction.

The patient reentered the hospital February 5, 1938, at which time the entire ascending colon and another ten inches of the ileum were resected, and a lateral ileocolostomy of the transverse colon carried out. The patient left the hospital after two weeks of an uneventful convalescence. Since that time she has been perfectly well and symptom-free. She has now only one bowel movement a day by regulating the amount of fruit juices and the residue in her diet. She has gained in weight, strength, and for the first time since the onset of her symptoms, which dates back almost ten years, feels perfectly well.

Pathologic Report: Resected bowel (40 centimeters) presents one portion 7 centimeters long with a thickened wall and superficial ulceration. Wall measures 4 by 6 millimeters thick with lumen narrowed considerably.

Microscopically, the mucosa is ulcerated; the submucosa thickened and densely infiltrated with round cells, few polynuclears. Muscularis and serosa are less densely infiltrated.

Pathologic Diagnosis: Chronic non-specific ulcerative colitis.

Case 2—concerns a former colleague, aged 30, whom I saw as a consultant. He entered Mercy Hospital April 26, 1932, suffering from a sense of fullness in the upper epigastrium, abdominal cramps, nausea and vomiting. Later the pain gradually became localized in the right lower quadrant and radiated down the right thigh. The patient stated that he had had several milder and similar attacks during the past two years prior to his admission to the hospital. There was no diarrhea, no hematuria, no lumbar pain, his white count was 13,000 with 80 per cent. polynuclears. A diagnosis was made of acute appendicitis. The appendix was removed by the attending surgeon and a laboratory report read "acute suppurative appendicitis." One week following the operation, the patient developed signs of intestinal obstruction and the formation of an abdominal abscess. Incision of the abdominal abscess and ileostomy were performed. The patient left the hospital in an im-

proved condition May 25, 1932, with a discharging fistula.

He reentered the hospital June 26, next, for repair of the fistula, and at this time a resection of the ileum was performed and an end-to-end anastomosis was made.

Pathologic Diagnosis of the resected bowel was: fibroplastic reaction due to fibro-peritonitis and chronic inflammation of the ileum.

About one week later (July 3rd, 1932), the patient began to develop symptoms of intestinal obstruction, and on that date ileostomy was performed and the ileum anastomosed to the transverse colon.

On August 6, 1932, repair was attempted of the fecal fistula which was resected down to the colon, and another ileocolostomy with the transverse colon carried out. The patient finally left the hospital with a discharging and functioning ileostomy.

In 1934, he entered the Mayo Clinic and at that time the ascending colon, part of the transverse colon, and all of the diseased segments of the ileum were removed, and a new ileocolostomy performed, after which the patient has been symptom-free and in good health.

Case 3. R. S., a male infant, twenty-one months of age, was referred to my service at the Edgewater Hospital, January 30, 1939, by the attending pediatrician with an admitting diagnosis of acute intussusception. The child had a temperature of 99.4 F., pulse 120, bloody mucous stools, vomiting, and a palpable mass in the right lower quadrant. The patient was operated on shortly after his admission. Under gas-ether anesthesia, a rjght rectus incision was made, and the cecum, ascending colon, and the transverse colon were found to be moderately distended. The ileum, for a distance of about eight inches was thickened, injected, soft, and mush-like in appearance. The normal folds were entirely obliterated, and the ileum was moderately dilated. The mesenteric glands were grouped in masses which gave one the impression of a handful of grapes; these glands were hard and bunched together, producing in this region several masses the size of walnuts. The mesentery of the ileum, cecum and ascending colon was markedly injected. The appendix was large and edematous, measuring ⅜ of an inch in diameter and four inches in length. Free peritoneal fluid was present in the abdominal cavity. This pathologic process was explained to the attending pediatrician, but because of the age of the child, he refused to permit anything but an appendectomy at this time, stating that if at a later date, obstructive symptoms should develop, further surgical treatment would be permitted.

Pathologic Report: Appendix, 8 centimeters long, 5 millimeters in diameter. Serosa engorged. Mucosa markedly injected, thickened, wrinkled, almost polypoid.

Microscopically the mucosa reveals marked hyperplasia of lymphoid tissue; the follicles are enlarged with the center revealing many polynuclears. The serosa contains foci of round and a few polynuclear cells.

Pathologic Diagnosis: Subacute appendicitis (secondary).

The child made an uneventful recovery, leaving the hospital after ten days, and up to the present time (8 months) has had no recurrence of its former symptoms.

DISCUSSION

The treatment of this disease is surgical, and when a definite diagnosis is made, a careful search of the diseased areas of the bowel, including the ileum, jejunum, and the colon should be instituted, and then a complete resection of all of the diseased bowel should be done. This, of course, may be performed in a number of stages until no diseased bowel remains, depending upon the prevailing condition at the time which will determine whether the operation should be performed in one, two, or more stages. I do not agree that looping or short-circuiting of the bowel to divert the intestinal flow is to be considered as a permanent cure, but concede that it may be done as a preliminary or temporary treatment to be followed by radical resection at a later date. To merely short-circuit the bowel, and leave a diseased portion of the gut active, renders the remaining portions of the bowel more vulnerable to infection, ulcerations, and granulomata, which will be followed later by obstructions, fistulas, perforations, and perhaps death. On the other hand, proper radical surgery at the time of the initial operation will lend itself to a rapid and permanent cure, and a great reduction in mortality and morbidity. To this should be added the avoidance of needless operations which usually follow faulty initial surgical procedures. There is no question that in the chronic obstructive cases resection must be performed and the obstructing lesion and diseased segments of the bowel removed. But, in the acute inflammatory conditions of the ileum, when the appendix is removed only after a diagnosis of acute segmental ileitis has been made, a radical surgical procedure should be performed either as a one or two-stage ileo-transverse-colostomy, with removal of all of the diseased ileum and the ascending colon. It is in these cases that the subject is so much debated, because it is believed by a number of observers that the amount of mesenteric involvement is a guide to, or a determining factor in the spontaneous cure of these cases. If these cases are observed long enough it will be found that there is no medical treatment for ileitis, and that eventually all of the true cases of terminal (segmental) ileitis will be followed by signs of obstruction with its varions complications, which

will necessitate multiple major surgical procedures.

It will be noted that the first two patients I have had under observation gave definite histories of previous attacks, one of having repeated attacks four years prior to being admitted to the hospital, and the other of having attacks of pain two years prior to hospitalization. In the first patient the tentative diagnosis was localized peritonitis with abscess formation following perforation four years after her initial attack, with a morbidity over a period of eight years and four operations with multiple resections before effecting a cure. The same observations are noted in the second patient—a morbidity of about five years and a series of multiple resections, colostomies, etc., before effecting a cure. If a correct diagnosis had been made at once and resection of the ileum and ascending colon with a transverse ileocolostomy had been performed at that time, one or two operations would have been sufficient with a morbidity time of four to six weeks, as against four to six years.

Even the twenty-one month old infant on which I was unable to perform a major surgical procedure because of failure to obtain authorization, eventually will be forced to undergo similar operations as in the other cases. Due to the fact that the infant is practically reared on a very soft and very bland diet, the return of the symptoms may be delayed, but as the residue increases and as the infant continues to grow, it will eventually develop signs of intestinal obstruction, and resection of the diseased area will have to be performed.

Spontaneous cures have been recorded by some authors, who did nothing but return the ileum into the abdomen after exploratory laparotomy. Such cases have not been observed long enough, since very often they get out of control and end up in other institutions, or die from perforation, generalized peritonitis or other causes.

Meyer reported a series of four cases of acute ileitis which he either left alone, performed a short-circuit operation, or resected the ileum. Since his article was published, he informed me that in the follow-up of the cases he had treated conservatively, one had to undergo an operation two weeks later for obstruction, another was operated upon two years later for an obstructive lesion, while his third patient found his way to the Mayo Clinic, where a resection was performed, and the fourth patient has been lost sight of. He concedes that in the acute cases in which the question of radical surgery procedure seems debatable, the best results now are obtained when radical resection is performed at the time of initial operation. Such a procedure offers the best chance for a permanent cure.

No medical management has been found definitely to cure segmental ileitis. However, since some success has been reported in the treatment of ulcerative colitis with sulfanilamide, it may be attempted by those who believe in conservative management when in the early stage of the disease the mesentery and its glands are not greatly involved or where no obstructive lesion is present. However, conservative treatment, including appendectomy, has proved fruitless in over fifty per cent. of the several hundred reported cases that had been subjected to appendectomy, and since the other fifty per cent. of the cases eventually develop some complication or chronic stenosing lesions, it would seem that conservative treatment has no justification except through dire necessity. We are confronted at this time with the same problem that the profession faced years ago in the treatment of acute appendicitis, when the accepted belief was that the appendix had to suppurate or become ripe before the surgeon should attempt operation. It remained for Deaver, Murphy and others to show the necessity for the appendix being removed within the first 24 to 48 hours of an attack. Likewise, if the great number of cases reported in the literature, as well as my own cases, mean anything, they demonstrate the fact that eventually all come to require further surgical intervention when the diseased segment has not been removed, and that conservative treatment, although it may render the patient free from symptoms for a period of one to five years or even longer, rarely if ever affords permanent relief. On the other hand, there is absolute evidence that under conservative management many patients have died, or mutilating operations had to be performed when resection, a comparatively simple procedure in the hands of a skilled surgeon, would prove all sufficient. It is at the early stage that radical surgery will not only afford the greatest relief but assure complete recovery in the shortest time without incurring the risk of serious complications.

It may be held that a number of observers

have reported cures of acute ileitis by simple appendectomy, but as their observations have not extended over five years, there is no assurance of a cure. At least ten years will have to elapse without recurrence before one can speak of an actual cure.

SUMMARY

1. Regional ileitis is an acute, sub-acute, or chronic disease of the terminal end of the ileum, but may involve any part of the small or large bowel.

2. In the acute stage the disease often resembles an attack of acute appendicitis, but the history shows repeated attacks of intestinal disturbances characterized by mushy or bloody stools.

3. In the chronic stage variable signs and symptoms of partial intestinal obstruction manifest themselves, which reveal characteristic x-ray findings, with resulting fistula and other complications following perforations.

4. The treatment for both the acute, subacute or chronic stage of the disease should be radical removal of the diseased segment of bowel either in one, two, or more stages, depending upon the condition of the patient.

5. The youngest case ever reported is that of a twenty-one-month old child, on which I was prevented from doing more than an appendectomy for the time being.

6. There is no medical treatment for this disease. Recognition of the fact that radical surgical intervention is the only means to a cure will tend to reduce its present morbidity and mortality rate.

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THE MENTALLY HANDICAPPED CHILD

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Most normal human beings show more or less sympathy for crippled children. Whether lamed by birth or disease, the broken bodies of youngsters stirs our compassion to action to help them in every way possible; to restore them sufficiently to compete, in some measure, with the more fortunate in physical health and to make their lot in life happier. In this great country of ours, with its population of 130,000,000, there are well over 300,000 such handicapped children. But in our democracy, where the life and limb of the individual is sacred and of first importance, much has been done for these unfortunates. There are special hospitals manned by experts, devoted exclusively to the mending of crippled bodies. There are schools staffed by specialists

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whose sole purpose is to train lame children in useful occupations to overcome their handicaps.

The money and efforts spent along this line have paid handsome dividends in material benefits and happiness to the crippled children, their parents and the taxpayers. Illinois may well be proud of her leadership in this work, and so well is it done that there are now more places for the care of the crippled than there are such children to enjoy them.

As good as this may be, there is, unhappily, another and darker side to the handicapped child problem. It is of greater social and legal importance and concerns itself with children born with limited intelligence—the so-called mentally handicapped children. Intelligence is an important factor in health, success and happiness of the individual, and its deficiency accounts for some of the disease, dependency and delinquency and the entailed failnre, unhappiness and distress in every civilized community.

What is a mentally handicapped child? There are other names given this condition that may sound more familiar, such as mental defective, feeble-minded, weakminded, backward, subnormal and dullwitted. They all mean the same thing, namely, that such children have minds whose growth does not correspond with or lags behind the normal years of age. They are children who are slow in learning if they can learn at all. They are usually several grades behind the required school work of our standard educational system because of delayed or arrested development of the intelligence. Thus we have often a picture of a full grown boy or girl directed by the mind of a child.

There are varions grades of mental retardation. The lowest grade has an intelligence that never reaches higher than that of the normal child of three. These are hopeless and as long as they live will need the care usually given a child of such age. There are others who never reach beyond the age of seven in intelligence. These may be tanght to do simple errands and other tasks about the home, may be able to guard against common physical dangers, but are generally incapable of earning a living by useful work. These need watchful care, especially the more grown girls, who, because of their mental deficiency but developed bodies, may be easily led into moral delinquency. These too often become hard to manage in the home and require institutional care.

There is a large group of mentally handicapped children of a less serious nature from the standpoint of mental deficiency, yet constitutes a vital commnnity problem because the mental range of these children is from subnormal to dull normal. They rarely get beyond the fifth or sixth grade in school and soon reach working age with this little education. As these children grow to adult age without special schooling or care they usually enter the unskilled labor class, and may be able to earn something towards self keep. They can do supervised manual labor not requiring involved reasoning. They are able to care for animals, do farm work and rnn simple machinery. They possess little or no initiative, do little planning for the future, nor can they hold a position of responsibility. They are not completely fitted by nature or nurture for ordinary commnnity life. Some of these persons may appear more intelligent on the surface than they really are, and may even convince employers to be given work requiring reasoning powers, but it is not long before the trne intellectual grade is revealed and they are soon discharged for inefficiency. Thus we find certain of them always out of work. In order to live they must lead a more or less parasitic existence, that is, living for the most part off of parents, dole, or the goodness of other persons. We must remember that the subnormals tend to develop antisocial outlooks and unsound habits as a result of the treatment received at the average public school. We must keep in mind that the subnormal is guided more by impulse than by reason. He is unable to resist temptation and too weak in judgment to have the full concept of right and wrong or to nnderstand fully the difference between mine and thine. Mix this with a full dose of idleness and we have a potential source of social evil and misconduct. They do get into trouble frequently and repeatedly because they are too stupid to be deterred by punishment. The weakminded are not born bad. They are individuals who lack the restraints demanded of all persons in their social group, and they break the commandments not because they are vicious but because they know no better. Concretely, a grown man of 25 years of age with an emotional control of a child of seven, acts, thinks and feels like a child of seven, and we can expect little more from him in mental

ability and morality than from a child of that age.

There is an alarming number of mentally handicapped individuals in our midst and we must not shut our eyes to the importance of the condition, nor minimize the steps to be taken to control and improve the situation. It may astonish many of you to learn that the United States has 850,000 children of school age who are definitely feeble-minded, determined to be so by standard psychological tests used to grade intelligence. The appalling fact is that 5,650,000 children of school age are estimated to be borderline subnormals. It is startling but true that 2 per cent. of the total U. S. population suffers from varying degrees of feeble-mindedness, and that 2 out of every hundred of all children of school age are in need of institutional care or some form of special education. Add to these figures the great army of epileptics, of whom there are some 14,000 in Illinois alone. These unfortunates because of their fits cannot pursue a gainful occupation for long, nor will they be hired if known to have this sickness.

Of course the ideal way to deal with the whole situation of the mentally handicapped, whether it be feeblemindedness or epilepsy, is prevention. But this is another matter. All that can be offered at this time is ways and means to better the condition as it exists right now. It is evident that there is a greater need for special attention and guidance of the mentally handicapped than that required by normal children. Patience and skill are necessary to bring out and make the best use of their limited mental faculties. The goal should be to discover these slow-witted children as early as possible, understand their shortcomings, straighten out their mental kinks and to aid them to become economic and social assets instead of liabilities. To put these children in public institutions merely to put them out of circulation is but a makeshift. In spite of lay opinion to the contrary, many backward and dull children can be made fairly safe and useful citizens, even if they cannot be restored to normal.

While it is true that some institutions for the feebleminded are doing good constructive work in their special field, many of them are overcrowded and are merely giving custodial care, ignoring most of the required scientific study of their charges. It is regrettable that Illinois, where such splendid service is afforded the physically handicapped, is behind in type and quality of service offered the mentally handicapped in other states. What we need here is the working colony system, away from the institutions, where the inmates live in cottages approximating home surroundings. States having this advanced method of handling the educable mental defectives report it as quite successful. The products of the labor of these persons is not only a source of revenue, but contributes to their keep and relieves in part the burdens of the taxpayer. It is urged that all who can should talk with the local state senator or state representative to support legislation fostered by the committee for the study of the mentally handicapped children to enable the building of the cottage system of colonies for the teachable feebleminded.

It is obvious that the mentally handicapped cannot make progress under our ordinary school teaching. They need intensive training in artisanship best fitting the mind of the patient. This is best done under colonization where useful work and right habits can be persistently drummed into weaker minds and made to stick. The key to the successful education of the mentally handicapped is patient, skillful training under such favorable environment as is afforded by colonization. It stands to reason that this important social and economic problem can be successfully met if you, the great and sympathetic audience, will do your share toward the establishment of the colony idea, to the great advantage of the mentally handicapped and the greater glory of humanitarian Illinois.

PERIODIC PARALYSIS

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Definition

This disease is primarily a familial condition with exceptional sporadic specimens characterized by recurrent attacks of flaccid paralysis of striated muscle with loss of tendon reflexes, and abolition of the electrical reactions (Ford). Between the attacks there is practically no indisposition and no indication of any abnormality existing in the individual, except for a mild developmental retardation in young children. The child

may not walk nor talk early, but these functions do develop progressively.

Historical Aspects

Da Costa, in 1870, spoke of intermittant paralysis, giving symptoms similar to those associated with the present conception of periodic paralysis, and was impressed with the mystery of its cause, promulgating the theory that this type of paralysis was due to certain "poisons" outside of, or within the body.

Back in 1903, Holtzapple referred to this condition in these words: "Much has been written lately on the subject of periodic paralysis, yet it remains a disease which is unique in its manifestations, obscure in its pathology, and of rare occurrence." He further states that in the twenty years preceding his written account the disease was not considered serious, and deaths attributed to this condition had not been reported. However, he had accounted for several deaths in one family under his observation occurring during an attack. He further stated that other members of the same family suffered periodically from "sick headaches."

Etiology

Over ninety per cent. of the cases are familial, and inherited. The disease may affect several members of one family. Disturbance of metabolism, or endogenous intoxication of unknown nature may be the causitive factor. The disease may skip one generation and appear in several members of the next. It may be transmitted through either parent, and if absent in the preceding generation, the parent may have suffered from paroxysmal "headaches." The condition ordinarily is not present until the fifth year of life or later. Males are affected twice as often as females. The attacks may be precipitated by excessive exertion, overeating, or rich food. The attacks last several hours, or may be from one to seven days in duration. It is suggested that the initial cause of this condition may be an acute infection, or one of the xanthemata. However, this has not been proven in very many cases. Atwood states that "Attacks are probably due to the circulation of some toxic substance acting upon the periphery."

Morbid Anatomy—Pathology

Present day theories suggest that there is a sero-chemical reaction about the neurone synapse in the anterior horn cells. The emphasis at present is on the suggestion, that the sero-chemical reaction is due to an accumulation of toxins or a progressive chemical change, due to a glandular disturbance of acid-base equilibrium in the body. There are no uniform or characteristic changes in the muscles (Ford), but several authors agree that there are definite changes in the muscle bundles of the muscle groups most commonly affected. There is said to be an infiltration of connective tissue and fatty degeneration of the fibres themselves. Histologically the muscle cells are extremely friable. Progressive atrophy or dystrophy of muscle groups is mentioned by several men who performed post-mortem examinations on diagnosed cases. Holtzapple mentions that late in life there is a gradual wasting of the shoulder-girdle and pelvic-girdle muscles as well as the leg muscles. Favill quotes Neustaedter as summarizing the pathology in this manner: "The place of the lesion is indisputably in the muscles, but its character and modus operandi are still not demonstrated." Urine examinations during attacks have shown increased acidity, increased indican, slightly positive albuminuria, and increased sulphate partition.

Symptoms of the Attack

Attacks may be frequent, or may occur once or twice in a long life. Attacks may always be mild, or always severe, or may vary in severity in one individual. During the prodrome there may be excessive thirst or hunger, and a feeling of numbness or tingling in the extremities, and the onset is almost always at night. The patient may awaken after a night's sleep to find that he is more or less completely paralyzed. The weakness begins, as a rule, in the legs, then extends to the arms and finally involves trunk and neck. In general, the proximal muscles are affected first. The cranial nerves are rarely affected. The diaphragm almost always escapes paralysis, although it is assumed that this may be considered the dominant factor when death does occur during an attack. Disturbances of speech and swallowing are probably due to respiratory distress produced by paralysis of intercostals and accessory muscles of respiration which are affected. There is no loss of consciousness nor sphincter control. The paralysis usually affects muscle groups, and the extremities may be in-

volved to produce a monoplegia, diplegia, hemiplegia or quadraplegia.

There is a complete loss of irritability of the muscles; electrical and mechanical stimulation provokes no reaction. In severe attacks all writers agree that there is definite dilatation of the heart and usually functional murmurs occur which disappear when the attack has subsided. The pulse may be feeble, slow, or irregular, with respirations rapid and shallow. Constipation or even obstipation is a consistent symptom during the attacks. Profuse sweating and decreased micturition or anuria is a common clinical feature. There is no fever, but a subnormal temperature is usually noted. Due to the labored breathing, deep breathing, cough and vomiting are practically impossible. There are no sensory symptoms and pain is absent but there is a sense of heaviness and a tired feeling which becomes very annoying to the patient, making him irritable and fretful.

Association with Other Diseases

In two instances, symptoms similar to those of periodic paralysis have occurred with Basedow's disease, but the paralysis was very mild and the interval of periodicity was irregular.

Holtzapple and Ford place emphasis on the association of this disease with hereditary migraine.

Differential Diagnosis

The only disease from which this must be differentiated, because of its periodicity is epilepsy, and the flaccid condition of the muscles without loss of consciousness are diagnostic features.

Diagnosis

The history and observation of recurrent attacks of weakness or paralysis gives a definite diagnosis. If the family history divulges other cases, the diagnosis is strengthened. If the electrical reaction of the involved muscles is lost during an attack, the condition may be pigeonholed as periodic paralysis.

Prognosis

Attacks become less frequent after middle life. Death is infrequent during attacks but has occurred. True atrophy (Grinker) or dystrophy of the muscle groups repeatedly affected has been rather consistently demonstrated. Some of the patients contend that forced exertion aids materially in hastening improvement or in warding off an impending attack. The first symptom of improvement is simply the ability to produce slight muscular contraction here and there, and complete control usually returns quite rapidly. In females the attacks cease when the climacteric is reached.

Treatment

(Ford) recommends low protein diet, a large quantity of fluids, and restriction of exercise. (Holtzapple) suggests bromides and rest. (Pollock) uses potassium chloride in large amounts with administration of whole thymus gland. Most men agree that mild sedation and catharsis is in order during the attacks.

Summary

1. Periodic paralysis is a rare hereditary disease, occurring usually in several members of a family and occasionally in sporadic instances. It begins in childhood.

2. A typical attack of this peculiar paralysis is characterized by periodic flaccid motor paralysis involving some or all of the voluntary muscles, except those of the face, eyes, tongue, organs of speech, of deglutition, and of the sphincters of the rectum and bladder.

3. The paralysis may be partial or complete, general or localized, transient or recurrent, during an attack or constantly present for the duration of the attack.

4. Definite pathological changes are not known.

5. The patient is usually perfectly normal between attacks.

CASE

Case History

The case I am showing tonight presented itself at my office on March 4, 1938. The child is of American parentage, but was born in Paracale, in the Philippines. He is the third of three living children; the other two children giving no evidence of this condition. There is no family history on either the mother's or father's side of any paralysis of this type having ever occurred, and no history of migraine. The child was a normal full-term moderate-labor delivery, with no evidence of birth trauma or prenatal injury, but after delivery he had difficulty in breathing for several days. However, within two months after birth, the child had a convulsion without apparent provocation and four or five convulsions did occur during the following five months at irregular intervals, and all without apparent cause. X-ray plates, taken in Manilla, of the thymus gland

revealed considerable enlargement of the thymic shadow. At nine months of age he received three x-ray treatments to the thymus gland. Within two weeks' time the first attack of paralysis occurred involving the right arm and leg and lasted two days. After this first attack the recurrences came at regular intervals of eighteen days and lasted from one to three days, the first day of each succeeding attack being consistently eighteen days from the first day of the preceding attack. When he was twelve months old pictures of the thymus disclosed an apparent recurrent enlargement of the gland. He received a second series of three x-ray treatments to the thymus. After this the interval between paralytic attacks was shortened to fourteen days, and some of the attacks lasted from five to six days. Further than this, some of the attacks involved all four extremities, which had not occurred previous to the second series of the three x-ray exposures. This was the status of the case when I saw the child at sixteen months of age.

Physical Examination

On physical examination I found the child to be a well-nourished normally developed white male, sixteen months of age, who could sit up but not stand. He made efforts to talk and seemingly understood simple things that were said to him. He was quiet and friendly during the examination, so I requested the mother to bring the child to my home one day before the attack was due, and permit me to observe all phases of the attack first hand. This particular attack was preceded by a day of fretfulness and irritability and came on probably during the night, because it was present the following morning involving the right arm and right leg and lasting three and one-half days. The reflexes of the parts involved were absent; there was no response to electrical stimulation of these parts but sensitivity to pain was present. There was no disturbance of sphincter control but the child was constipated, as he is during every attack. He ate fairly well but had to be coaxed to start eating. On the fifth day, the flaccid paralysis was gone and the child was bright and happy again, having retained no evidence of any abnormal state. A succeeding attack produced paralysis of the opposite arm and leg, and also a complete paralysis of both arms and legs for one day of this second observed attack. When the quadraplegia was present there was difficulty in swallowing.

Treatment

Epileptic management with ketogenic diet did disturb the interval of periodicity, a remission of nineteen days occurring at one time. Hospitalization and laboratory work-up produced the impression that the body chlorides were diminished; there was no other deviation from the normal. Large daily single doses of potassium chloride were given and soon after administration, increased awareness and vivaciousness were noted. The attacks were definitely less severe but they lasted longer.

For the past three months whole thymus gland has been given daily, and definite reduction in the severity of the attacks was observed. A new development is the transient character of the paralysis in the last ten or twelve attacks. That is, a paralysis is present in one arm, or arm and leg, for possibly a day, or a day and one-half, and then the function of one of the paralyzed members may return for a day, and then be lost again for one or two days before the termination of this attack. When function returns, the child uses the arm and fore-arm, thigh and leg for a period of occasionally one or two days, before he can move the fingers and toes.

Today the child attempts to walk alone, talks, has gained and looks very well. He is going back to the hospital for further blood chemistry study the end of this week.

This case being sporadic and not familial falls in the rare eight or ten per cent. of a disease which is in itself very uncommon.

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POSSIBLE CAUSE OF MALFORMATIONS AND SPONTANEOUS ABORTIONS

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Ever since the investigations of R. and Paula Hertwig regarding x-ray irradiation of the ova of echinoderms which results in malformations there has been an increasing experimental evidence that various chemical and physical injurious agents damaging an ovum or a spermatozoon may bring about a malformation or a monstrosity. There was, and still is, a gap between the experimental evidence on animals and human pathology. In most cases of human tetralogic cases there seems to be no immediate evidence of any abnormal chemicals used, except possibly the ones applied as the spermatocidal birth control agents, nor any exposure to a sufficiently powerful destructive ray or some such physical agent. It is evident that the cause of malformations must be universal, acting equally on man and on animals.

The epoch making popularization of ovulation time by Knauss and Ogino, known to embryologists for over a dozen years previously, but not properly evaluated by them, offers a chance for another speculative attempt to explain the cause of malformation in humans, and, possibly, a means to prevent the occurrence of these unhappy fruits of labor in the future.

It seems possible that a monstrosity or a malformation is the *result of the fertilization of a dying ovum* by a normal spermatozoon or, less likely, the result of the fertilization of a healthy egg by a dying spermatozoon. The first possibility appears more likely, because the ovum, according to the prevailing current concept, has a very limited span of life, some forty-eight hours or less, whereas the life span of a spermatozoon is seventy-four hours. Watching any protozoon die under a microscope—an ameba or a flagellate, for instance—one notices that it does not die at once and in all parts at the same time. Some parts survive much longer than the others. If, therefore, an egg is impregnated by a spermatozoon at, say, forty hours after extrusion, when it is on its last—is almost dead—a grave malformation may result. If the egg is but slightly damaged by the process of its rapidly approaching senility one may expect a slight malformation of one part of the body of the fetus. If the ovum was all but dead at the time of fertilization one might expect not only a malformation but a dead fetus unable even to go through the stages of intrauterine development.

This explanation seems to be in agreement with the current concept that a good proportion of spontaneous abortions are cases of grave malformation and monstrosities and will also explan why we have so many pregnancies (about 25 per cent.) never reaching the term or ending in stillbirths.

One is tempted, then, to make a few interest-

ing calculations. If we add the percentage of spontaneous abortions and stillbirths, the percentage of nonviable grave monstrosities, such as anencephalus, spina bifida, etc., and the percentage of less extensive malformations, such as harelip, deformed toes or fingers, clubfeet, etc., one would roughly estimate them to reach the level of one-fourth to one-third of the total pregnancies. Assuming, as we do, that most (if not all) of these cases are due to the senility of the ovum, one comes to the conclusion that, possibly, the last one-quarter or the last one-third of the life span of the ovum (12 to 16 hours after ovulation, plus two to three hours for the spermatozoon to reach the ovum) constitutes the dangerous period when fertilization ends in a catastrophe. If this dying ovum is not allowed to be fertilized we shall eliminate malformations, if the proposed theory is correct.

It is possible that the child resembles the parent whose sex cell happened to be in better shape at the time of fertilization.

One may assume that the superior human being is the result of the well timed union of a fresh but fully matured spermatozoon with an ovum at the vibrant peak of its vitality. The rest of us, average humans, are the results of at least one parent cell being moderately stale, indeed very stale in some instances.

While the ultimate solution of the problem requires a good deal of investigation we have been able to obtain partial proof of its plausibility. It seems to be well established that the rabbit ovulates only during sexual exposure. We should, then, have very few, if any, malformations in rabbits. We have canvassed, therefore, a number of local rabbit breeders. Out of a total of about 20,000 rabbits bred we were able, so far, to obtain only one reasonably sure case of malformation—a bunny with two tails. It appears, therefore, that malformations in rabbits, where the ovum is impregnated quite soon after the rupture of the follicle, occur very seldom.

We are not regarding the spermatozoon with the same grave suspicion. The spermatozoon has no bulky cytoplasm which is apt to undergo the slow process of deterioration. Its life span is longer. But we must not absolve this agent completely. In experimenting with the action of the x-ray on spermatozoa, as we have done, one observes that their motility is not visibly impaired even after exposure to very heavy doses of the rays, the doses which should destroy its vital properties quite radically.

If the above line of reasoning is correct how can one hope to prevent malformations in humans? The answer seems to be simple, even though its immediate practical application is not easy at all. One should not expose the dying egg to fertilization. And if the woman knows when she ovulates (and many women claim to know this exactly), *she must not expose herself during the next two days.* It is in the two following days, probably about thirty-six hours after ovulation, that the ovum becomes old, senile, and supposedly begins to deteriorate.

At least as far as the majority of malformations are concerned, the explanation offered seems to be entirely plausible. The problem is of such tremendous importance for all of us that even though the above concept lacks direct and conclusive proof it is presented here in the hope of promoting further investigation by others better provided with facilities for research. The final solution, however, will not come from the laboratory but from clinical evidence, from actual life.

SUMMARY

It appears possible that most spontaneous abortions, stillbirths, monstrosities and malformations might be due to the fertilization of a dying ovum, which has, apparently, a very short life span, about forty-eight hours.

To avoid these catastrophies of pregnancy fertilization should not be allowed during the second day after ovulation; rather, the fertilizing intercourse should precede ovulation by a day or so.

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SPINAL ANESTHESIA

A Modified Technique with the Rationale of its Employment in Five Thousand Cases

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The development of anesthesiology as a surgical and a medical specialty has resulted in the formation of international, national and local societies composed of physicians who devote their

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entire interests to the science of anesthesia and gas therapy. The members of these groups by reason of extensive training and practical clinical experience are unquestionably best prepared to select and administer an individualized anesthetic. Particularly is this true with regard to spinal anesthesia. In many areas, however, due to lack of specialists or because of certain habitual preferences, the surgeon administers the spinal anesthetic and does the operating as well. It is to this group, definitely not specialists, that we are offering what we believe to be a satisfactory routine procedure based upon experience gained from five thousand spinals. For the "surgeon-anesthetist" the essential requirements for a successful spinal anesthetic technique are: 1. simplicity of administration; 2. prompt onset of effective anesthesia; and, 3. avoidance of severe complications such as respiratory or cardiac failure during the operation.

I SELECTION OF CASES

1. For operations below the umbilicus in adults we feel convinced that spinal anesthesia by the technique to be described, is the agent of choice regardless of preoperative hypertension, hypotention, arteriosclerosis or other systemic conditions usually presented as contraindicating this type of anesthesia.

2. Children and unstable adolescents less than 14 years of age are not recommended as routinely good subjects for temperamental reasons.

3. For operative procedures in the supra-umbilical region of the abdomen (these constituted about 12 per cent of the total series) we use our technique on patients who are between 16 and 60 years of age and who have systolic blood pressures between 110 and 160 with correspondingly relative diastolic readings.

4. Any infectious or inflammatory pathological manifestation of the skin in the region of the lumbar spines precludes aseptic introduction of the spinal needle, and some other type of anesthetic is selected.

If a surgeon will analyze the number of operative procedures performed distal to the umbilicus (hernias, appendectomies, operations on the genitalia, bladder, prostate, sigmoid amputations, etc.) as compared with those done proximal to it within the abdomen he will readily see what a tremendous field has been opened for the employment of this method with but few restrictions as indicated above.

II. PRACTICAL PHYSIOLOGY OF SPINAL ANESTHESIA

Any of the modern spinal anesthetic agents (novocaine, metycaine, nupercaine, pontocaine, spinocaine) when introduced into the subarachnoid space will produce anesthesia of some or all parts of the body depending upon several variable factors. These variables are usually enumerated as: 1) site of injection; 2) position of patient; 3) specific gravity of anesthetic; 4) amount of drugs; 5) amount of dilutant; 6) rapidity of injection; 7) barbotage; 8) direction of the bevel on spinal needle (whether pointing up or down the canal); and 9) specific gravity of spinal fluid. For practical purposes, however, we can eliminate all but five of these variables, viz.: 1) site of injection; 2) specific gravity of anesthetic solution; 3) position of the patient; 4) amount of drug; and 5) amount of diluent. These are the cardinal factors in determining the extent of anesthesia, and we may dismiss the other considerations by stating that: 1) we inject at the rate of about 1 cc. every two seconds; 2) we *never* employ barbotage, feeling that there are other more accurate methods of securing a higher level of anesthesia; 3) we are not interested in the direction of the bevel so long as the opening is entirely within the subarachnoid space; and 4) the sp. gr. of the spinal fluid is of no importance in our technique.

Let us review now how we apply each of these cardinal variables to secure a satisfactory anesthesia.

1. *Site of injection.* For operations below the umbilicus we routinely employ the second lumbar interspace because this is anatomically the widest. For upper abdominal work, we enter one space higher, i. e., between the first and second lumbar vertebrae.

2. *Position of patient.* This is of prime importance. Immediately following the spinal injection every patient is placed in 30 to 40 degrees Trendelenberg with the thighs and legs horizontal so that the instrument tray can be adjusted over the extremities within reach of the surgeon. This position accomplishes two purposes: 1) raises the level of anesthesia to the costal margin or higher, if desired; and 2) prevents cardiac and respiratory failure as will be

discussed subsequently. Furthermore, in pelvic surgery it facilitates excellent exposure of the operative field. In surgical procedures confined to the perineal region (hemorrhoidectomies, vaginal plastics, transurethral prostatic resections, etc.) we sometimes employ a modified Fowler's position thus limiting the anesthetic solution to the distal end of the spinal canal.

3. *Specific gravity of the anesthetic solution.* We employ a hyperbaric solution obtained by dissolving novocaine crystals in spinal fluid. Normal cerebrospinal fluid varies in specific gravity between 1.001 and 1.009. Because we routinely employ the Trendelenberg position for abdominal surgery we need a heavy anesthetic solution to gravitate cephalward. A light solution would ascend into the elevated lower lumbar region and limit our area of anesthesia to the perineum and lower extremities. The abdomen would be unanesthetized. This is one of our objections to pontocaine fluid. This solution has a sp. gr. of 1.0068, lighter than some spinal fluids but heavier than most. Following its injection we do not know whether it is hyperbaric or hypobaric with reference to the particular spinal fluid. There are two methods of remedying this objection to pontocaine: 1) we can add ten per cent glucose to purposely make it hyperbaric, or; 2) we can determine the sp. gr. of the spinal fluid in question by using one drop in a mixture of chlorbenzene and xylol. Knowing the sp. gr. of the two (spinal fluid and pontocaine) we can place the patient in the proper degree of inclination to facilitate our anesthetic solution gravitating toward the costal margins. These are complicated maneuvers to one not accustomed to them and are presented here simply for the purpose of emphasizing that an anesthetic solution heavier than *ANY* spinal fluid should be employed. Novocaine (procaine-neocaine) crystals dissolved in spinal fluid fulfill this requirement.

4. *Amount of anesthetic agent.* Our observations show that surprisingly small amounts of novocaine are required. We have never employed more than 120 mg. in any case. For operations below the umbilicus, 100 mg. give perfect anesthesia and optimum relaxation for about 70 minutes. For upper abdominal work, 120 mg. afford similar operating conditions for about 80 minutes. Surgeons may argue that the duration of anesthesia is not sufficiently long for some procedures. The quiet abdomen, muscular atonia and the ease of exposure, however, materially decreases the operating time as compared with the same case under a general anesthetic. In some lengthy operations it may be necessary to induce analgesia with nitrous oxide or ethylene inhalations to render skin closure entirely painless.

5. *Amount of dilutent.* This refers to the volume of spinal fluid used to dissolve the novocaine crystals. We employ 3 cc. for 100 mg. and 3½-4½ cc. for 120 mg. depending on the approximate length of the individual spinal canal. In a tall subject we inject 4½ cc.; a short patient presents an indication for 3½ cc. Average is 4 cc. for the 120 mg. dose.

III. VASOMOTOR AND RESPIRATORY CHANGES IN RELATION TO SPINAL ANESTHESIA

Our views on the maintainance of a relatively normal blood pressure during spinal anesthesia have changed considerably following an analysis of this series. Previously we administered ephedrine, adrenaline or cobefrin on the evidence of a beginning sustained drop in pressure. Today we feel with Labat that vasoconstricting drugs may be definitely harmful, and that even a marked fall in blood pressure is of little importance as long as the patient is in the Trendelenberg position. Our reason for this attitude is as follows: When a patient under spinal anesthesia begins to shows signs of central vasomotor and/or respiratory paralysis it is not due to the direct action of these drugs on the medullary centers. Co Tui has injected high concentrations of novocaine directly into the fourth ventricle with no evidence of subsequent vasomotor or respiratory depression. The two centers being situated in the floor of the ventricle were of course submerged in the anesthetic solution in his experiments. If direct action of the anesthetic is not responsible for the central depression we must look elsewhere for the cause. We believe that clinical observation has confirmed the explanation advanced by both Labat and Koster for many years. The symptoms of cardiac and respiratory paralysis in spinal anesthesia can be attributed to one factor: cerebral anemia. The following considerations will substantiate this viewpoint. The maintenance of a normal blood pressure depends on proper neurone tone of the vasomotor sympathetic fibers leaving the spinal cord between the first thoracic and the second lumber vertebrae. These fibers supply the involuntary musculature of the

peripheral arterioles. As a spinal anesthetic ascends in the subarachnoid space, it paralyzes more and more of these vasomotor constrictor fibers. Should it ascend to the level of the first thoracic vertebra, there is a complete paralysis of *ALL* efferent sympathetic nerve fibers and a fall in blood pressure to zero, indicating a generalized peripheral vasodilatation. Similarly, a level of anesthesia to the ensiform (7th) causes a paralysis of about 50 per cent of these constrictor fibers, producing a moderate initial fall in blood pressure. This is compensated by increased constriction of those vessels supplied by the intact proximal and unanesthetized nerve segments. In any spinal anesthesia not involving all sympathetic fibers, we can visualize two areas of intra-arteriolar tension: 1) an area of relatively *HIGH* intravascular pressure consisting of those arterioles innervated by the unanesthetized constrictor fibers; and 2) an area of relatively *LOW* intra-arteriolar pressure corresponding to the dilated vascular bed whose innervating fibers have been anesthetized. It follows also that with a high level of anesthesia (including the first thoracic segment) we have no intact constrictor fibers and the entire dilated vascular bed represents an area of decreased arteriolar pressure. The pooled blood contained in this hypotensive area devoid of functioning constrictor fibers will always gravitate toward the most dependent part of the body. Vasoconstrictor drugs such as ephedrine cannot hope to empty this dilated vascular reservoir because its nerve supply which ephedrine must stimulate to produce constriction has already been paralyzed by the spinal anesthetic. To be sure ephedrine will constrict the *INTACT* unanesthetized sympathetic fibers, thus temporarily increasing the blood pressure but this is definitely undesirable and may be even harmful. Constriction of the proximal intact arteriolar musculature can accomplish only one thing: the squeezing of more blood toward the dilated relaxed vascular bed and away from the vital centers in the medulla. Our problem is not to raise the blood pressure by vasoconstriction, which serves only to remove more blood from active circulation, but rather to empty the paralyzed vascular bed and thus secure a greater blood supply to the medullary centers. This can be accomplished in only one way, by placing the patient in the Trendelenberg position and allowing the pooled blood to gravitate cephalward which it will do in every case. Furthermore, this position increases the venous return to the right auricle, facilitates an optimum filling of all cardiac chambers during diastole, and consequently secures a maximum ventricular stroke volume at systole. Instituting the "Head-Low" position early in anesthesia we believe is the best prophylaxis against cerebral anemia with its cardiac and respiratory complications.

IV. TECHNIQUE

1. Preanesthetic medication of seconal gr. ½ one hour before operation. This renders the patient less tense and nervous. Barbiturates also have an antagonistic action to toxic effects produced by novocaine in sensitive individuals.

2. No enema is given on the morning of operation. Frequently the entire enema is not recovered preoperatively and the relaxing effect of the spinal anesthetic results in an evacuation of the remainder on the operating table.

3. The patient is placed on his right side with the back exposed and acutely flexed. The lumbar area is prepared with tincture of merthiolate and draped with three sterile towels. We do not use iodine here because during the operation when the patient is in the supine position the iodine is often prevented from evaporating freely, resulting in vesicular excoriations on the skin.

4. The selected lumbar interspace is marked by an intracutaneous wheal of 1 per cent novocaine in the mid-line, and through this wheal the intervertebral tissues down to the ligamentum subflavum are infiltrated.

5. The tip of a short-beveled spinal needle is now introduced into the subarachnoid space and the cerebrospinal fluid allowed to drip into a vial of novocaine crystals. As indicated above, we use 100 mg. in 3 cc. of fluid for all operations below the umbilicus. For upper abdominal work 120 mg. are dissolved in 3½-4½ cc. depending on the length of the patient's vertebral column as compared with the average.

6. The anesthetic is dissolved completely, the solution drawn up in a 5 cc. syringe, cleared of air-bubbles and injected slowly (1 cc.-2 sec.). Aspiration of about ¼ cc. of spinal fluid is practiced at the beginning and end of injection to demonstrate that the bevel is still in the subarachnoid space. The needle is then withdrawn:

a dressing over the site of puncture is unnecessary.

7. Shoulder-braces are adjusted, and the patient placed immediately in 30° Trendelenberg.

8. No ephedrine or other vasoconstricting drug is given. Anesthesia develops well within the time necessary to prepare the operative field.

9. At the conclusion of the operation the patient is taken to his room on an inclined cart and maintained for six hours in about 20° Trendelenberg by elevating the foot of the bed on blocks. This precaution together with the use of a small-diameter spinal needle (24 gauge) as advocated by Sise and Swinton has practically abolished postoperative headache due to the spinal anesthesia.

SUMMARY

A technique in spinal anesthesia particularly applicable for surgery distal to the umbilicus is presented. The method is simple, and has given uniformly good results in five thousand cases covering a six-year period of clinical study.

This series was presented with the permission of Dr. N. A. Funderburk, director of surgery, Riegel Hospital, Trion, Ga.

707 Broadway.

FUTURE OLD AGE CARE A PROBLEM

According to the welfare bulletin the number of recipients of old age assistants and the outlay from the Illinois State treasury for assistant payments is growing because the population of the state 65 years and over is increasing.

The aged of the State numbered 121,000 and comprised one-twentieth of the population in the latest United States Census (1930). Today there are more than 515,000 persons 65 years of age and over, and twenty years from now in 1960, the estimated 931,000 oldsters will make up one-tenth of the total population of the State. Each aged person is a potential applicant for old age assistance.

The increase in the proportion of older persons in the general population is caused by a decline in the birth rate and the improvements in health and medical science which result in more persons living to a ripe old age.

Think what the increase in the aged population of the State means in terms of the old age assistance program! The present roll of 131,000 recipients comprises about 26.8 per cent of the persons of eligible age. If the percentage remains constant, more than 11,000 recipients will be added to the rolls within the next year, simply because more persons are reaching the age of 65 years. If the present rate continues until 1950, the number of recipients would probably be 189,000, and before 1960 the number would pass the 200,000 mark.

Of course, there are other factors which will enter into the picture, aside from the increase in the aged population. Old Age Insurance payments from the Federal Government to persons who have contributed to the Old Age Insurance plan will begin in 1942. This should decrease the need of old age assistance. Improvements in the economic outlook may make it possible for children to increase contributions for the support of their aged parents. On the other hand, any liberalization in the eligibility requirements of the present Old Age Assistance Act would probably greatly increase the number of recipients.

The increase in the number of recipients in future years will, of course, entail additional outlay for assistance payments. With an average award of $20 per recipient per month, the cost in 1940 will probably be more than $34,000,000, and with an average of $25 per person per month the cost would run close to $43,000,000. If an average of $25 were paid in 1950, the cost is estimated at $57,000,000 per year, or $114,000,000 for a two-year period. Compare this amount with the $27,918,225 paid for assistance payments during the past twelve months.

Such sums of money sound fabulous. State revenues are already stretched to the limit to cover the cost of highways, public education, unemployment relief, the State institutions, and the other ordinary costs of State government. Increased payments for old age assistance must be covered by either an increase in revenues or a decrease in other governmental costs.

4% OF NATIONAL INCOME FOR MEDICAL CARE

A little less than 4% of the national income goes to pay for medical care, according to a report on U. S. consumer expenditures just issued by the National Resources Planning Board. In 1935-36, the year studied, approximately $2,200,000,000 was spent for medical care. However, this covered only three-quarters of the total medical bill of the nation; the rest was met by free services supplied by public and private agencies. The total national income of 59.3 billion dollars in 1935-36 was spent as follows: Food, 29%; housing, 16%; household operations, 9%; clothing, 9%; automobiles, 6½%; medical care, 4%; recreation, 3%; personal care and tobacco, each about 2%; transportation, 1½%; education, less than 1%. Approximately 10% was saved, 4% given away to relatives, friends, churches, philanthropies, and only 1½% as income and other personal taxes.

FOR OPEN NEWS CHANNELS

"There is nothing so important in a democracy as a free and fair dissemination of information. The telegraph, the telephone, and the radio have become almost as important as the press itself."

Reed, who was a candidate for the Democratic nomination for President in 1928, criticized the general principle of government in business.

"In any business that can be conducted by private companies, governmental management is almost invariably a mistake," he added. "Costs increase, and inefficiency in management inevitably results."

Society Proceedings

COMING MEETINGS

April 11—Randolph County Medical Society, 6:30 P. M., Royal Hotel, Chester. Otto S. Krebs, "Management of the Puerperium." Anthony B. Day, "Heart Disease."

April 11—Maternal Welfare Meeting, Monmouth, Dinner, Hawcock's Cafe. Frederick H. Falls, Obstetrics. Clifford Grulee, Pediatrics.

April 12—Will-Grundy County Medical Society, Noon luncheon, Hotel Louis Joliet, Joliet. Dr. John R. Ballinger, "A Brief on Medico-Legal Law."

April 12—Jersey-Greene County Medical Societies, 6:30 P. M., Colonial Hotel. Wm. J. Dieckman, "Vanishing Toxemias of Pregnancy." Julius H. Hess, "The Premature Infant."

April 18—Post Graduate Conference, Dixon, Illinois, State Hospital Assembly Hall, Program from 1:30 P. M. to 9:00 P. M. Julius H. Hess, "Bronchiectasis in Childhood."

Charles M. McKenna, "Diagnosis of Renal Tumors."

Carl V. Moore, "Differential Diagnosis and Treatment of the Hemorrhagic States."

D. K. Kitchen, "The Diagnosis and Therapy of Sexual Immaturity."

Warren G. Murray, "Demonstration of Cases from Dixon State Hospital."

Francis E. Senear, "Dermatology". Cases brought in to be discussed.

Charles B. Puestow, "Influence of Drugs on Intestinal Motility." Moving picture film.

Harold D. Palmer, "Kidney." "Biliary Tract Disease."

Robert S. Berghoff, "Heart Disease."

April 19—Pike County Medical Society, 12:00 Noon, Pittsfield. Dr. James H. Hutton, "The People, The Physicians and the Politicians."

Dr. Thomas D. Masters & Robert J. Masters, "Peptic Ulcer."

April 25—Stephenson County Medical Society, 6:30 P. M., Freeport.

April 26—Will-Grundy County Medical Society, Noon luncheon, Hotel Louis Joliet, Joliet. Budd C. Corbus, "Bladder Tumors."

May 1—Schmitt Memorial Hospital Clinical Conference, 6:15 P. M., Beardstown. H. Close Hesseltine, "Sulfanilamide Therapy in the Obstetric Patient."

May 2—Henry County Medical Society, 6:00 P. M., Kewanee Annual Meeting.

May 3—Will-Grundy County Medical Society, Noon luncheon, Hotel Louis Joliet, Joliet. Eugene Cary, "Causes and Treatment of Prolonged Labor."

May 3—Madison County Medical Society, Alton, Illinois. Lee Connel Gatewood, "Dysentery, Including Amebic Dysentery."

May 8—St. Anthony Hospital Staff, 8:00 A. M., 5:30 P. M., Clinic Day. Refreshments served at noon.

May 10—Jersey-Greene County Medical Society, 6:30 dinner at home of Doctor Gledhill, Jerseyville. Otto H. Schwartz, "The Management of Dystocia." Walter M. Whitaker, "Pneumonia in Childhood."

May 10—Will-Grundy County Medical Society, luncheon, Hotel Louis Joliet.

May 14—Lake County Medical Society, 8:15 P. M. Research Hall, Abbott Laboratories, North Chicago, Harry Mock, "Skull Surgery."

May 14—Bureau County Medical Society, 6:30 P. M., St. Margaret's Hospital, Spring Valley. Sumner L. Koch, "The Immediate Treatment of Extensive Open Wounds."

May 14—Effingham County Medical Society, 6:30 P. M., Benwood Hotel, Effingham. Drew William Luten. "Problems of Heart Disease."

May 16—Stephenson County Medical Society, 6:30 P. M., Freeport.

May 17—Will-Grundy County Medical Society, Noon luncheon, Hotel Louis Joliet, Joliet. Paul C. Bucy, "Brain and Spinal Cord Tumors."

May 24—Will-Grundy County Medical Society, Noon Luncheon, Hotel Louis Joliet, Joliet. Edwin P. Jordan, "Arthritis, Especially Pathology."

May 31—Will-Grundy County Medical Society, Noon luncheon, Hotel Louis Joliet, Joliet. Channing W. Barrett, "Preservation and Restoration of the Function of the Pelvic Floor."

Marriages

Ray Bickerman, Peoria, Ill., to Miss Kathryn Louise Eckert in Chicago, February 3.

George L. Kraft, Chicago, to Miss Alleen Hoffland, of Soldiers Grove, Wis., February 7.

Personals

Dr. Alfred J. Kobak, Chicago, discussed "Management of Prolonged Labor" before the Madison County Medical Society on February 2.

Dr. William H. Haines has been appointed assistant to Dr. Harry R. Hoffman, director of the Cook County Behavior Clinic. Dr. Haines is assistant clinical professor of neurology at Rush Medical College.

The Chicago Gynecological Society was addressed, March 15, by Drs. William F. Mengert, Iowa City, on prolapse of the umbilical cord, and Philip H. Smith, Evanston, Ill., on hysterectomy.

Dr. Henry H. Kessler, Newark, N. J., among others, addressed the Chicago Orthopaedic Society, March 8, on "Amputations and Prostheses."

The Chicago Society of Internal Medicine was addressed, March 25, among others, by Dr. Ernst Gellhorn, L. Yesiniek, M.S., and Chester W. Darrow, Ph.D., on "The Role of the Carotid Sinus in Experimental Convulsions."

Dr. Leon Unger, Chicago, addressed the Macon County Medical Society in Decatur, January 30, on "Newer Phases of Migraine."

At a meeting of the Sangamon County Medical Society in Springfield, February 1, Dr. Lawrence S. Fallis, Detroit, discussed "The Technic of the Repair of Inguinal Hernia Including Fascial Transplants."

Dr. Bela Schick, New York, addressed the Chicago Society of Allergy, March 18, on "Allergy and Immunity."

Dr. Frederic W. Bancroft, New York, discussed "Traumatic Abdomen" before the Chicago Society of Industrial Medicine and Surgery, March 18.

Dr. Edward F. Dombrowski, managing officer of the Chicago State Hospital, was recently made president of the Conference of Managing Officers of the state department of public welfare.

Dr. S. M. Feinberg was invited to speak to the Des Moines Academy of Ophthalmology and Otolaryngology on March 25, subject, "The Present Status of Allergy in Rhinology."

Drs. Joseph Brennemann and Albert H. Montgomery presented a program on "Acute Abdominal Conditions in Children" in LaSalle March 28, sponsored by the Maternal Welfare Committee of the 2nd Councilor District of the Illinois State Medical Society.

Dr. Guy Cushing held a "Surgical Interview" before the DeWitt County Medical Society at Clinton, March 27.

Dr. L. F. Weber was invited to hold a Skin Clinic for the Macoupin County Medical Society at Carlinville on March 28.

Drs. James H. Hutton, Philip H. Kreuscher, Robert S. Berghoff and Frederick H. Falls participated in a Post-Graduate Clinical Conference, sponsored by the doctors of southern Illinois at DuQuoin on March 7.

Dr. Charles Newberger discussed "Reducing the Hazards of Childbirth" before the Will-Grundy County Medical Society on March 8.

Drs. Henry Buxbaum and H. W. Elghammer presented a program on "Indications and Technique of Cephalic and Podalic Version" and "Rheymatic Heart Disease in Children" before the Jersey-Greene County Medical Societies on March 8.

Dr. Clifford J. Barborka addressed the Boone-Story County Medical Societies at Boone, Iowa, on February 23, subject, "Nutrition and Sub-Clinical States of Deficiency Disease."

Dr. Clark W. Finnerud was invited to give a paper on "Diseases of the Skin" before the Vermilion County Medical Society at Danville on March 5.

Dr. Sidney A. Portis discussed "The Differential Diagnosis of Pain of the Right Upper Abdominal Quadrant," before the Lake County Medical Society, at the Mercy Hospital, Gary, Indiana, February 8.

Dr. J. P. Greenhill read a paper in South Bend before the South Bend Medical Society on "Endocrinology in Gynecology," on Feb. 21.

Dr. A. E. Kanter will read a paper on "The Prevention of Abortion With a Discussion of Endocrine Therapy" before the staff of the Schmitt Memorial Hospital, Beardstown, March 6.

Dr. C. Leon Wilson gave talks on obstetrical subjects before the Post Graduate Medical Assembly in Prairie View, Texas, March 4 and 7, and the Medical Institute in Los Angeles, California, March 10 and 14.

Dr. Clark W. Finnernd gave a talk before the Vermilion County Medical Society at Danville, Illinois, Tuesday, March 5, on the "Diagnosis and Treatment of Common Diseases of the Skin," lantern slide demonstration.

Dr. Herman L. Kretschmer read a paper by invitation before the Academy of Medicine at Toronto, Canada, Tuesday, March 5. The title was "Present Trends in Transurethral Prostatic Resection."

Dr. Stanley Gibson gave a paper on "Heart Disease in Childhood" before the Lake County Medical Society on March 12.

Dr. James K. Stack addressed the McLean County Medical Society on the subject of "Fractures," March 12.

Dr. Henry Buxbaum gave a paper on "Prolonged Labor" before the Knox County Medical Society on March 12.

Dr. Harvey S. Allen gave a paper on "Infections of the Hand" before the Effingham County Medical Society on March 12.

Dr. Craig Butler gave a paper on "The Premature Infant" before the Bond County Medical Society on March 12.

Dr. Guy VanAlstyne addressed the McDonough County Medical Society on March 13, subject "Biliary Tract Surgery."

Dr. H. C. Hesseltine spoke on "Obstetric Hemorrhages" before the Bureau County Medical Society on March 14.

Dr. Clifford J. Barborka gave an illustrated lecture on "Medical Management of Gall Bladder Disease" before the Whiteside County Medical Society on March 14.

Dr. Harry A. Oberhelman addressed the Will-Grundy County Medical Society on March 15, subject "Surgical Diseases in Diabetes."

News Notes

—The McDonough County Medical Society recently presented to Dr. Elizabeth R. Miner, Macomb, a check as a token of its appreciation of her work as secretary of the society for the last fifteen years. Dr. Miner was elected for life to this office but has resigned. She and her husband will spend their winters in Florida. She has been delegate to the state medical society for twenty years and has held every office in the county society as well as the office of second vice president of the state society.

—The North Shore Branch of the Chicago Medical Society was addressed at the Sovereign Hotel, April 2, by Drs. Paul C. Barton, director, Bureau of Investigation, American Medical Association, on "Quack Remedies;" Josiah J. Moore, "Cancer Quackery," and Mr. A. M. Simons, assistant director, Bureau of Medical Economics, American Medical Association, "Medical Economic Quackery."

—Dr. William F. Braasch, Rochester, Minn., will be guest speaker at the annual Tri-Chapter banquet of Alpha Kappa Kappa Fraternity at the Chicago Athletic Club April 3. His subject will be "Future Trends in Medicine." Dr. Herman L. Kretschmer will serve as the toastmaster.

—The establishment of the Bernard Portis Research Fellowship Fund in Surgery at Michael Reese Hospital has been announced. The object of the fund, which provides $1,000 annually for a full time fellow, is to arrange research training in surgery for young men who have had basic and fundamental training in surgery. Graduates of recognized medical schools who have had internships in approved hospitals will be considered. Applicants should submit their problems in writing, together with an estimate of facilities and supplies needed, to Dr. Sidney A. Portis, secretary of the newly formed fund. Dr. Bernard Portis died Nov. 1, 1939.

—The third of a series of post-graduate conferences sponsored by the Illinois State Medical Society was held at DuQuoin, March 7. Dr. Gilbert H. Edwards, Pinckneyville, president of the Perry County Medical Society, will preside. The speakers will include:

Dr. Andy Hall, Jr., St. Louis, Urinary Tract Infections.

Dr. Clinton W. Lane, St. Louis, Diagnosis and Treatment of the Common Skin Diseases.

Dr. Joseph C. Jaudon, St. Louis, Problems of the Newborn.

Dr. Robert S. Berghoff, Chicago, heart clinic (four patients).

Dr. Frederick H. Falls, Chicago, Management of Abortion.

Dr. Francis J. Dean Sauer, St. Louis, Hand Infections, Diagnosis and Treatment.

Dr. Philip H. Krenscher, Chicago, Fracture Problems.

Dr. Charles W. Mayo, Rochester, Minn., Preoperative and Postoperative Care of the Surgical Case.

Dr. James H. Hutton, Chicago, Diagnosis of Endocrine Disorders.

Dr. Edwin S. Hamilton, Kankakee, Voluntary Health Insurance in Illinois.

—The Henry Schmitz Memorial Lecture was delivered by Dr. Francis Carter Wood at a public meeting, March 6, sponsored by the cancer research committee of the Chicago Woman's Club and the Chicago Medical Society. Dr. Wood discussed cancer. The meeting was held at the woman's club following an all day clinical session. At 6:30 the Chicago Medical Society held a reception and dinner in honor of Dr. Wood, who is director of the Institute of Cancer Research at Columbia University College of Physicians and Surgeons, New York. Dr. James Randolph Webster, clinical instructor in dermatology, Rush Medical College, delivered the Mary Redfield Plummer Memorial Lecture, March 7, at the woman's club on "Primary Cancer of the Skin."

—A clinicosurgical week under the direction of The Mayo Foundation will be held May 6 to 11, inclusive. A series of surgical clinics and discussions will be presented with particular em-

phasis on the treatment of cancer. Visiting physicians are invited to attend.

—A LAST REMINDER to make your reservation for the 18th Annual Convention of the Woman's Auxiliary to the American Medical Association to be held at the Hotel Pennsylvania, New York City, June 10 to 14, 1940. New York has much to offer aside from the convention and we are sure you will not want to miss the opportunity of visiting New York this year.

—Temple Fay, M.D., Professor in the Department of Neurology and Neurosurgery, Temple University Hospital, Philadelphia, will discuss "Temperature Factors as Related to Cancer" at the University of Illinois College of Medicine, 1853 West Polk Street, Chicago, on Saturday, April 27, 1940, from ten to eleven o'clock, in Room 423.

This lecture, sponsored by Alpha Omega Alpha, is open to students, faculty members and all interested persons.

—The GEHRMANN LECTURES for 1939-1940 will be delivered in the Medical and Dental College Laboratories Building, 1853 West Polk Street, in Room No. 423, on April 17, 18 and 19, 1940, by Dr. C. A. Elvehjem, Department of Biochemistry, University of Wisconsin, College of Agriculture, Madison, Wisconsin.

Program—April 17, Wednesday, 1 P. M.—Vitamins and Deficiency Diseases; April 18, Thursday, 4 P. M.—Methods of Determining Vitamin Deficiencies; April 19, Friday, 4 P. M. —Vitamins and Normal Nutrition.

DEATHS

Robert Henry Beverly, Springfield, Ill.; Bennett Medical College, Chicago, 1912; member of the Illinois State Medical Society; state district health superintendent for the state department of health; aged 61; died, January 22, in St. John's Hospital.

James Ernest Brooks, Chicago; Bennett Medical College, Chicago, 1910; member of the Illinois State Medical Society; aged 56; died January 4, of arteriosclerosis and chronic nephritis.

Franklin S. Davis, Peoria, Ill.; Chicago Homeopathic Medical College, 1893; a Fellow, A.M.A.; aged 70; on the staff of the Methodist Hospital, where he died, January 27, of pneumonia.

Ernest Anthony Everett, O'Fallon, Ill.; St. Louis University School of Medicine, 1906; member of the Illinois State Medical Society; aged 56; died, January 19, in St. Elizabeth's Hospital, Belleville, of coronary thrombosis.

Henry B. Downs, Danville, Ill.; St. Louis College of Physicians and Surgeons, 1898; formerly a minister and lawyer; aged 80; died, January 21, in the Lake View Hospital of chronic myocarditis.

William Albion Dulaney, Wayne City, Ill.; St. Louis University School of Medicine, 1905; aged 66; died, January 21, of myocarditis.

James B. Dunham, Wenona, Ill.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 85; died, January 10, of myocarditis.

James West Hingston, Chicago; Hahnemann Medical College and Hospital, Chicago, 1882; aged 81; died, January 29, in the West Suburban Hospital, Oak Park, Ill., of hypertrophy of the prostate.

Stonewall W. Johnson, Sullivan, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1887; formerly mayor and health officer; aged 76; died, January 19, of chronic nephritis.

Benjamin E. Jones, Rock Island, Ill.; Louisville (Ky.) Medical College, 1884; for many years medical director of the Modern Woodmen of America; aged 79; died, January 17, in Davenport, Iowa, of gastrointestinal hemorrhage.

Albert Frederick Kaeser, Highland, Ill.; University of Illinois College of Medicine, Chicago, 1901; a Fellow, A.M.A.; served during the World War; at one time bank president; on the staff of St. Joseph's Hospital; aged 61; died, January 28, in the Barnes Hospital, St. Louis.

James Harrison Rachels, Danville, Ill.; Meharry Medical College, Nashville, Tenn., 1908; aged 60; died, January 16, in St. Elizabeth Hospital of a ruptured esophagus resulting from hiccoughs.

Clara C. Sterling, Chicago; Hering Medical College, Chicago, 1907; aged 71; died, January 4, in the Middle Georgia Hospital, Macon, of myocarditis.

Arthur Franklin Stotts, Galesburg, Ill.; Medico-Chirurgical College of Philadelphia, 1899; a Fellow, A.M.A.; fellow of the American College of Surgeons; served during the World War; on the staff of the Galesburg Cottage Hospital; aged 64; died, January 9, of angina pectoris.

George M. Straight, Winchester, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; for many years county physician; aged 82; died, January 28, of coronary thrombosis.

Charles Brentano Wagner, Chicago; Chicago Medical College, 1888; on the staff of the Evangelical Deaconess Hospital; aged 74; died, January 18, in the Illinois Masonic Hospital of pneumonia.

Augustus S. Warner, Chicago; Northwestern University Medical School, Chicago, 1895; a fellow, A.M.A.; aged 71; died, January 18, in the West Suburban Hospital, Oak Park, Ill., of coronary thrombosis.

C. V. Arthur Weichelt, Barrington, Ill.; Jenner Medical College, Chicago, 1900; served during the World War; aged 70; died, January 4, in the Veterans Administration Facility, North Chicago, of cerebral arteriosclerosis.

The swaddled infant pictured at right is one of the famous works in terra cotta exquisitely modeled by the fifteenth century Italian sculptor, Andrea della Robbia. In that day infants were bandaged from birth to preserve the symmetry of their bodies, but still the gibbous spine and distorted limbs of severe rickets often made their appearance.



A bambino from the Foundling Hospital, Florence, Italy,—A. della Robbia

Glisson, writing in 1671, described an ingenious use of swaddling bands — "first crossing the Brest and coming under the Armpits, then about the Head and under the Chin and then receiving the hands by two handles, so that it is a pleasure to see the Child hanging pendulous in the Air . . . This kind of Excercise . . . helpeth to restore the crooked Bones. . . ."

STRAPPED FOR RICKETS

SWADDLING was practised down through the centuries, from Biblical times to Glisson's day, in the vain hope that it would prevent the deformities of rickets. Even in sunny Italy swaddling was a prevailing custom, recommended by that early pediatrician, Soranus of Ephesus, who discoursed on "Why the Majority of Roman Children are Distorted."

"This is observed to happen more in the neighborhood of Rome than in other places," he wrote. "If no one oversees the infant's movements, his limbs do in the generality of cases become twisted. . . . Hence, when he first begins to sit he must be propped by swathings of bandages. . . ." Hundreds of years later swaddling was still prevalent in Italy, as attested by the sculptures of the della Robbias and their contemporaries. For infants who were strong Glisson suggested placing "Leaden Shooes" on their feet and suspending them with swaddling bands in mid-air.

How amazed the ancients would have been to know that bones can be helped to grow straight simply by internal administration of a few drops of Oleum Percomorphum. What to them would have been a miracle has become a commonplace of science. Because it can be administered in drop dosage, Oleum Percomorphum is especially suitable for young and premature infants, who are most susceptible to rickets. Derived from natural sources, this product is rich in vitamins A and D. Important also to your patients, Oleum Percomorphum is an economical antiricketic.

Oleum Percomorphum offers not less than 60,000 U.S.P. vitamin A units and 8,500 U.S.P. vitamin D units per gram. Supplied in 10 and 50 c.c. bottles, also in boxes of 25 and 100 ten-drop soluble gelatin capsules containing not less than 13,300 vitamin A units and 1,850 vitamin D units.

MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.

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Hasn't the vogue for alkalizing gone TOO FAR?

Physicians are only too well aware of the specious advice to alkalize that everyone is bombarded with . . . through the radio, newspaper advertisement, billboards, etc. And millions of laymen have been persuaded to dose themselves with soda bicarbonate, in one guise or another, blissfully ignorant of the dangers of alkalosis and of the likelihood that persistent use of alkalies in gastric hyperacidity may serve to accentuate and perpetnate the hyperacidity.

The main therapeutic principle represented in Syntrogel Capsules is *adsorption* of acid, the chief ingredient being Aluminum Hi-gel 'Roche', an aluminum hydroxide of unusually high adsorptive capacity. Syntrogel Capsules also contain Syntropan, the Roche synthetic antispasmodic which gives atropine-like and papaverine-like therapeutic effects without mouth-dryness, tachycardia, or mydriasis. One or two capsules, with a glassful of water, taken immediately on the appearance of hyperacidity or flatulence, is all that is required in most cases. This dose may be repeated, if necessary. Patients having recurring waves of hyperacidity may be made comfortable by one or two capsules taken before the peak of acidity is reached. HOFFMANN-LA ROCHE, INC., NUTLEY, N. J.



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OVERCOME GASTRIC HYPERACIDITY WITHOUT STRONG ALKALIES

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Book Reviews

Shock Blood Studies as a Guide to Therapy. By John Scudder, M. D. 55 illustrations; five plates, three of which are in color. Philadelphia, Montreal and London. J. B. Lippincott Company. 1940. Price, $5.50.

The management of the patient in shock has been investigated by many during the past four centuries. Out of this background and the author's experience with Asiatic Cholera, together with a more recent experimentation and clinical research, this work emerges as a new tried implement in the handling of shock—shock such as arises from our mechanized life where burns, automobile and industrial accidents, operation hazards, and dehydration states occur daily.

Proceedings Third Annual Symposium Northwestern University Medical School Department of Industrial Medicine. Chicago. September 25-26, 1939. Price, $2.00.

Pneumoconiosis (Silicosis): The Story of Dusty Lungs. A preliminary report by Lewis Gregory Cole, M. D., and William Gregory Cole, M. D. New York City. John B. Pierce Foundation. 1940. Price, $1.00.

This report to the John B. Pierce Foundation by its Director of Silicotic Research presents the results of a four years' study of lung dust from a fresh point of view, and describes findings which are at variance with accepted conceptions and have important medical, legal, social and economic implications.

Contents

I. Introduction.
II. Etiology (opaque and non-opaque dust flecks).
III. Pathogenesis (dissemination of dust through the lungs—phagocytosis).
IV. Pathology (four types of morbid change).
V. Roentgenology (correlation with four types of morbid change).
VI. Social and Economic Aspects.
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Diseases of the Gallbladder and Bile Ducts. By Waltman Walters, B. S., M. D., M. S. in Surgery, Sc. D., F. A. C. S., Head of Section in Division of Surgery, The Mayo Clinic; Professor of Surgery, The Mayo Foundation (University of Minnesota); and Albert M. Snell, B. S., M. D., M. S. in Medicine, F. A. C. P., Head of Section in Division of Medicine, The Mayo Clinic; Professor of Medicine, The Mayo Foundation (University of Minnesota). 645 pages with 342 illustrations on 195 figures. Philadelphia and London: W. B. Saunders Company, 1940. Cloth, $10.00.

Throughout this book the authors have attempted to confine their discussion to such matters as are capable of direct practical application. The book gives special consideration to the problems of the surgical treatment of patients with jaundice. Special atention is given to the hemorrhagic diathesis and to the methods of dealing with it.

Injection Theatment of Hernia, Hydrocele, Ganglion, Hemorrhoids, Prostate Gland, Angioma, Varicocele, Varicose Veins, Bursae and Joints. By Penn Riddle, B. S., M. D., F. A. C. S., Assistant Professor of Clinical and Operative Surgery, Baylor University, College of Medicine; Director of the Varicose Vein Clinic, Parkland Hospital, Dallas, Texas. 290 pages with 153 illustrations. Philadelphia and London: W. B. Saunders Company, 1940. Cloth, $5.50.

The purpose of this book is to include all those conditions in which the injection method of treatment may properly be applied. Preceding the explanation of each injection technic there is an accompanying discussion of the indications and contraindications where the criteria for the employment of that particular technic is specifically set forth.

Textbook of Pyretetherapy. By Willa Phillips, R. N. Ann Arbor, Mich. Edward Brothers, Inc. 1939. Price, $2.00.

Handbook of Orthopaedic Surgery. By Alfred Rives Shands, Jr., M. D., in collaboration with Richard Beverly Raney, M. D. Illustrated. St. Louis. The C. V. Mosby Company. 1940. Price, $4.25.

In this second edition the authors have brought up-to-date those portions of the text in which new and accepted forms of therapy have been described. Many illustrations have been redrawn for the sake of uniformity and many new ones have been added.
Book Review.....

Heil Hunger! Health Under Hitler. By Dr. Martin Gumpert. New York and Toronto. Alliance Book Corporation, Longmans, Green & Company. 1940. Price $1.75.

This book studies the effect of the Nazi regime on the health of the German people. Setting aside discussions of political, racial, or religious controversies, it shows clearly the degeneracy and illness that have resulted from the present situation in Germany.

The book is based exclusively from Nazi sources, medical statistics in technical German magazines, and the like.

The New International Clinics. Edited by George Maurice Piersol, M.D. Volume I. New Series Three. Philadelphia, Montreal, New York. J. B. Lippincott Company. 1940.

This work consists of original contributions: clinics; and evaluated reviews of current advances in the medical arts by outstanding medical authorities throughout the United States.

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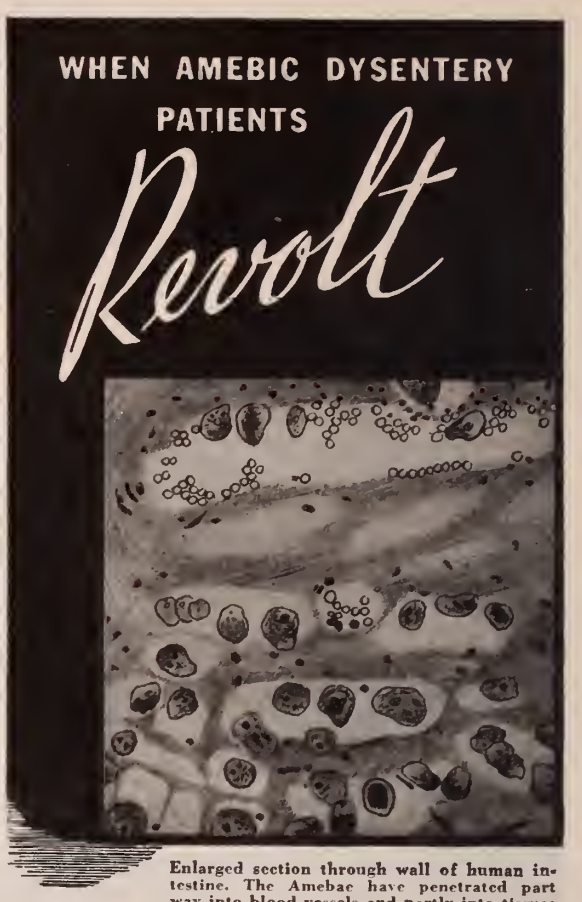
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** Zener, F. B., **Am. Jl. Surg.** 44:416 (1939)

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Book Reviews

ESSENTIALS OF THE DIAGNOSTIC EXAMINATION. By John B. Youmans, M.D. New York. The Commonwealth Fund. 1940. Price, $3.00.

This hand book should prove to be an important aid to the physician in his daily practice. The author outlines the basic physical examinations, and considers the technique, the possible findings, and the significance of these findings. The simplified discussions of cardiac and neurological examinations are particularly helpful. He offers a youthful guide in history taking, with a discussion of the purpose and meaning of the various parts of the history, and suggestions as to technique.

Of especial interest is the laboratory section, which presents the physiologic background of the test, indications for their use, and their diagnostic significance.

A SHORT STORY OF CANCER OF THE BREAST AND CANCER OF THE UTERUS. Second Edition. By Marion Ellsworth Anderson, M.D., Clinton, Iowa. The Franklin Press. 1939. Price, Postpaid, Cloth, $1.50. The DeLuxe in du Pont Fabricoid at $2.50, postpaid.

Based on observations during twenty-seven years, all the writings pertaining to these two subjects which have appeared in the A. M. A. Journal since 1910, a study of the 80 books listed on the last pages of this work and an abundance of cancer material. The author made further study by travelling more than 200,000 miles to gather and sort out material for this book. It is concise and accurate. 106 pages, 125 pictures of cancers of the breast and uterus, x-ray pictures of metatases, photomicrographs, trans-illumination, x-ray, radium and cautery treatment.

Read the last sentence on pages 40, 78, 82; (last two sentences) 93, 94 and 102, then you will understand and appreciate that this book was written especially for the doctor and his nurse. "One good picture worth one million words." This book has 125 of the finest pictures and illustrations.

FETAL AND NEONATAL DEATH. By Edith L. Potter, M.D. and Fred L. Adair, M.D. Chicago, Illinois. University of Chicago Press. 1940. Price, $1.25.

This work is a survy of the incidence, etiology, and anatomic manifestations of the conditions producing death of the fetus in utero and the infant in the early days of life.

The work is designed to meet the demand for descriptive material relative to the technique of autopsy examination of the fetus and newborn infant, this book includes some discussion of the statistics, means of prevention, and finding or pathologic investigations. This is another publication in the series especially designed for the use of doctors, internes, nurses and students.

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(Continued from page 26)

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Winnebago	Harold D. Palmer, Rockford	Wm. K. Ford, Rockford.
Woodford	Ernest Pearson, Eureka	W. S. Morrison, Minonk.

Book Reviews

MANUAL OF DERMATOLOGY. By Carroll S. Wright, M.D. Philadelphia. The Blakiston Company. 1940.

This Manual is intended chiefly for medical students and general practitioners of medicine. In this work, emphasis has been placed on those dermatoses which make up the bulk of skin diseases seen in general practice, with only a definition or bare mention of the less common condition. Therapy is limited to a few methods which are most likely to succeed in a particular case.

THE NEWER NUTRITION IN PEDIATRIC PRACTICE. By I. Newton Kugelmass, M.D. 183 Illustrations. Philadelphia-Montreal-London. J. B. Lippincott Company. 1940. Price, $10.00.

This book applies the newer knowledge of nutrition to every day practice of pediatrics. One unit on Nutritional physiology reveals a physical and chemical basis of the growing organism in terms of materials of life derived from food, air and water.

Unit two deals with nutrition in health and presents established principles and procedures for the advancement of positive health and the prevention of chronic disease.

Unit three, on nutrition in disease, considers most of the disorders in infancy and childhood in terms of nutrient causation or involvement as a basis for nutritional therapy. Systemic disturbances primarly affected by nutritional factors have been discussed in great detail while regional disturbances secondarily related to diet are given cursory consideration.

CLINICAL ROENTGENOLOGY OF THE ALIMENTARY TRACT. By Jacob Buckstein, M.D. With 525 Original Illustrations. Philadelphia & London. W. B. Saunders Company. 1940. Price,

In this work the author has kept in mind the point of view of the specialist in this field, be he roentgenologist or gastro-enterologist, and also the needs of the interest and the surgeon; the author has described all those details which are essential to a proper roentgenographic study of both functional and organic changes in the alimentary tract.



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Its soothing, nonirritant isotonic vehicle does not produce the burning sensation so often experienced with ephedrine in physiologic salt solution; it does not interfere with ciliary activity, does not present the potential danger of some oily vehicles.

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Wm. H. Holmes, M.D., Chicago, Med. Con.
Fritz Moellenhoff, M. D., Neuropsychiatrist and Psychoanalyst
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Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

"It appears that neither iodine alone nor thyroxine, as ascertained by chemical assay, give a uniform means of estimating metabolic activity of thyroid material. The chemical linkage within the molecule seems to be an important factor of influence in the physiologic action." (Meyer and Wertz: *Endocrinology*, May, 1939, xxiv, p. 683.)

Among the preparations tested, a thyroglobulin (containing 0.565% total iodine and 0.165% thyroxine iodine) proved physiologically superior to U.S.P. thyroid powder (0.2% total iodine and 0.061% thyroxine iodine) when the two were fed in doses to represent equivalent amounts of thyroxine.

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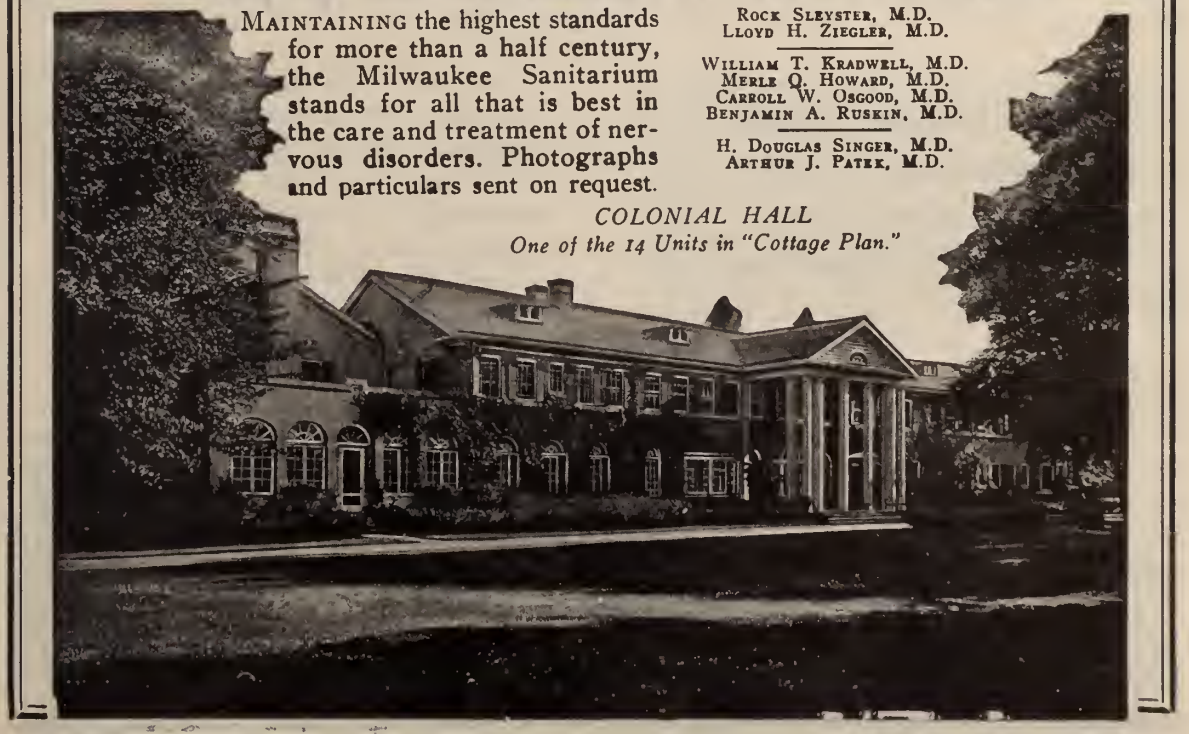
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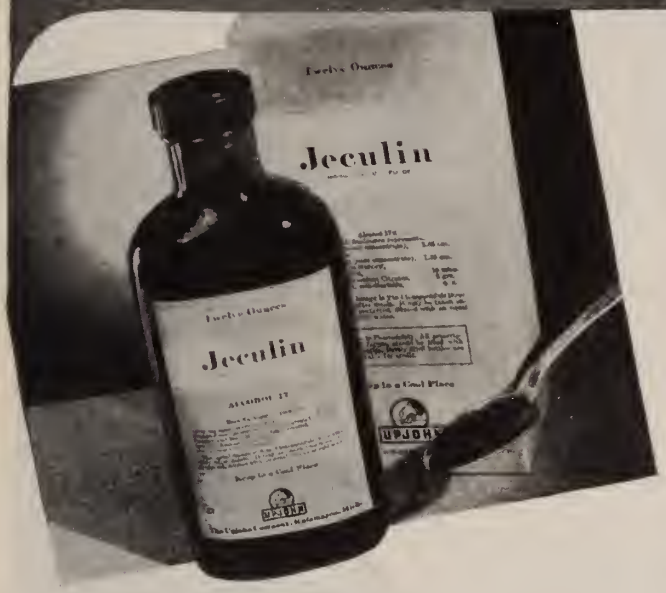
Larostidin is a remedy that offers the prospect of prompt relief of symptoms in new peptic ulcer cases as well as those that have run the gamut of diet-and-alkali management, antispasmodics, analgesics, and protein shock. Just how Larostidin acts is not known. But it does bring relief. Commenting on the therapeutic value of Larostidin (histidine) the J.A.M.A. in Current Comment, November 21, 1936, states: "Combined with more conventional methods of treatment, however, histidine may be regarded as a useful adjunct even though no accurate knowledge exists concerning its mode of action in relieving pain."

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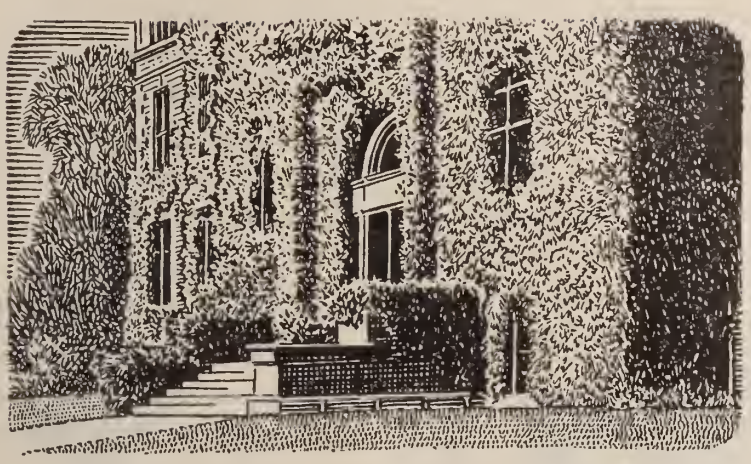
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The chemical, physical, and biological properties of vitamin K have been well established (1, 2, 3, 4). Besides vitamins K_1 and K_2—isolated from natural materials—an homologous series of synthetic compounds has been found to possess antihemorrhagic properties. As the vitamin K unit, the antihemorrhagic activity of 1.0 microgram of pure 2-methyl-1, 4-napthoquinone has been suggested; however, further research seems necessary before final selection of the vitamin K unit is made (4).

Clinical investigations have also established the importance of vitamin K in the clotting of human blood (3, 4). It has been demonstrated that avitaminosis K results in a prothrombin deficiency, with resultant prolonged blood clotting time. Although hypoprothrombinemia can frequently be attributed to inadequate intestinal absorption of vitamin K or to hepatic injury, other causative factors are also recognized; important among these is a deficiency of vitamin K in the diet.

The distribution of vitamin K in foods also has been studied. It has been found that vitamin K activity appears to be concentrated in the photosynthetic portion of the plant (3). Research during the next several years should add greatly to our knowledge of the extent to which this factor occurs in common American foods.

Discovery of vitamin K is another step towards establishment of the complete nutritive requirements of man. Recognition of this new factor, however, suggests that other factors—as yet unknown—will undoubtedly be found essential to man. Consequently, the wisdom of a varied diet to supply the identified, as well as the unidentified, essential nutrients, should be immediately evident. The large number of canned foods, available at all seasons, may well be included in diets designed to promote optimum nutrition.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

REFERENCES

1. 1937. Annual Review of Biochemistry, 6, 364.
2. 1939. Ibid., 8, 428.
3. 1939. J. Am. Med. Assoc., 112, 1457.
4. 1939. Ibid., 113, 2056.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-ninth in a series, which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

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Betaxin is also supplied in tablets for oral use and for injection, in ampules and vials for injection, and in a highly palatable elixir form.

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Help the mother

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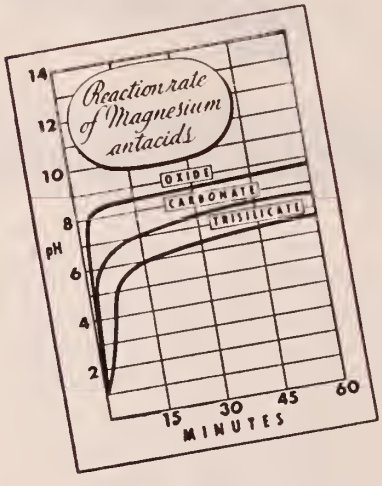
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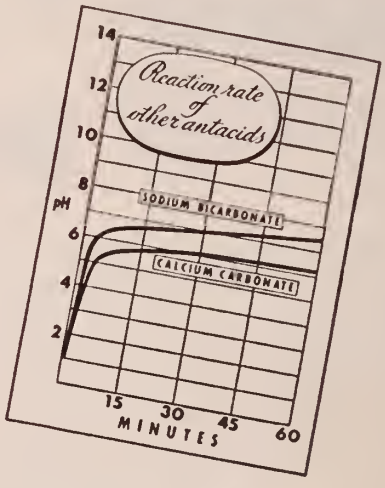
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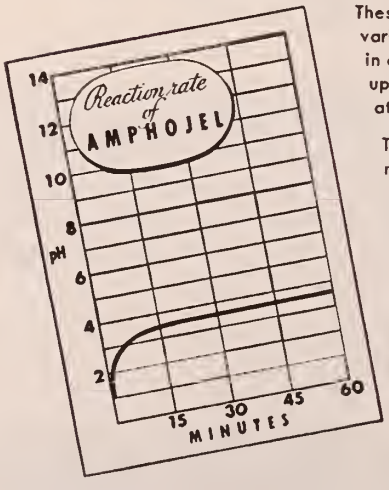
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There is growing recognition of the fact that it is unnecessary, and often undesirable, to neutralize completely the gastric chyme with alkalies and alkaline earths.





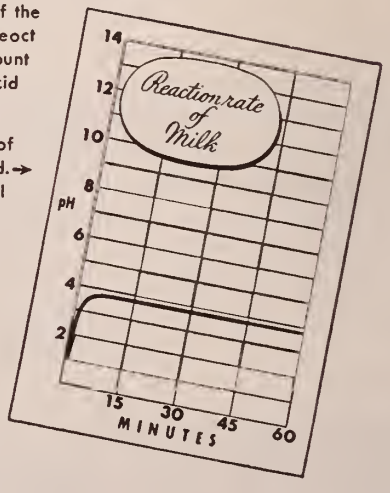


These charts show the pH of the various antacids when they react in double the theoretical amount upon N/10 hydrochloric acid at 37°C.

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The effect of two volumes of milk on one volume of acid.→ One volume of Amphojel produces the buffering effect of twenty volumes of milk.

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Restorative

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THE mucosal defense mechanism of the vagina is a highly important factor in the therapeutic campaign against vaginal leukorrhea.

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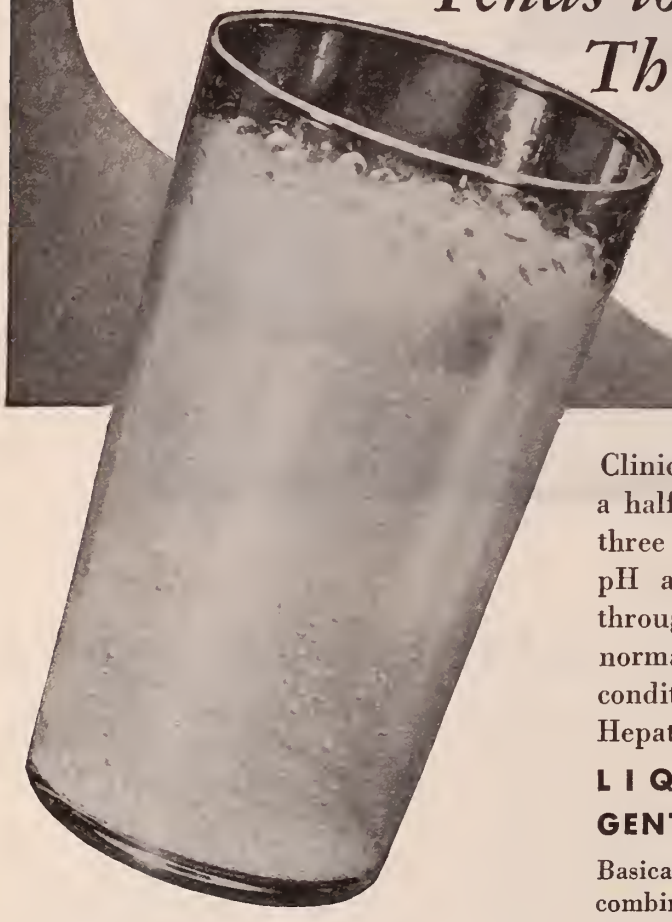
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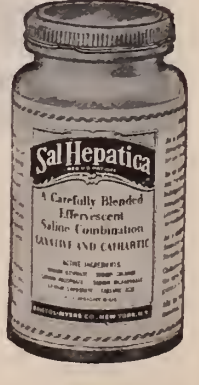
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All gelatine.	Only contain 10% to 12% gelatine.
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Absolutely no sugar.	85% sugar average.
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ILLINOIS MEDICAL JOURNAL

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THE ILLINOIS STATE MEDICAL SOCIETY

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Editorials

APOSTROPHE!

By

CHARLES J. WHALEN, M. D.

One hundred years! A century!
Three generations in the life of man.
But to the Infinite far less
Than the silent passing of a note against the wind.
We have struggled all of us. . . .
And greater yet the struggle always is—
For us today, for those to come and those who went before.

Like a cell dividing and redividing
Doubling through loss and losing through the gain.
That is the task *Hygeia* sets for us
That is the goal that Aesculapius sought
And Galen, too and every other brother of the twisted snakes.
Sleep peacefully, O our Hippocrates.
The oath you took, the oath we follow still
As men alone and men by cordons bound
Rests in our care, protected and secure.
The lamp you lit, that flame is guiding still
Our efforts and our lives. And neither age,
Nor youth flamboyant, nor weak indulgence of a lesser self
Has stopped, or will stop us come what will
As hundreds after hundreds of the years roll on.
For we are men of medicine, and as such
Can heal and help the suffering sons of God.
And we have faith in Him, and in our fellow man.

THE ILLINOIS STATE MEDICAL SOCIETY

Archives Era
(1840-1899)

In this centennial issue, we would look backward over one hundred years to watch the Illinois State Medical Society take form and to honor its accomplishments.

In 1817 even before Illinois attained statehood a few energetic physicians organized in Vincennes, Illinois Territory, a small medical library; and in the same year, a medical practice act appeared in the Laws of the Illinois Territory. Apparently ineffective, it doubtless provided the impetus for the "Act for the Establishment of Medical Societies," signed by Governor Bond on March 24, 1819, and the "Act Prescribing the Mode of Licensing Physicians" of January 15, 1825, both of which were soon repealed.

One result of the Act of 1819 was to interest young Dr. John Todd in medical organization, for he was president of the first district society set up under this act. Twenty years later we find the same Dr. John Todd instrumental in organizing the State Medical Society, founded in Springfield in 1840.

1840—Dr. Lucius Zeuch's investigations led to the discovery of the call for the State Society, sent out by the assembly of delegates meeting in Springfield on June 9, 1840, for the establishment of a society along ethical lines. The delegates, realizing that the Legislature, which had repealed the medical practice acts, was not sympathetic with their aims to improve the deplorable situation, couched the call to their fellow physicians throughout the state in the following exalted language:

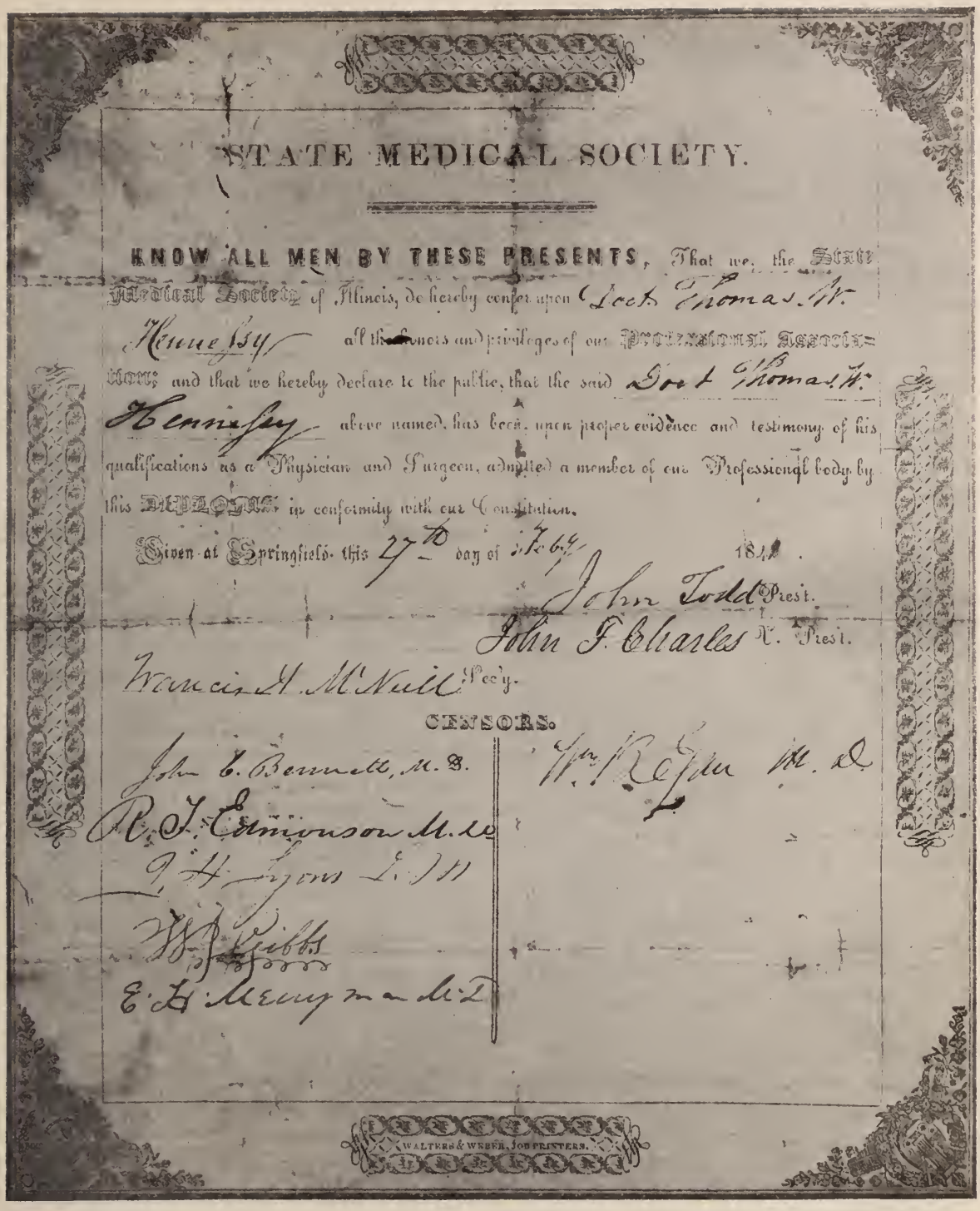
"MEDICAL CONVENTION OF ILLINOIS—

To the Medical Profession of Illinois:

"At a meeting of a number of the Physicians and Surgeons of the State of Illinois, convened in Springfield on the 9th of June, 1840, for the purpose of making preliminary arrangements for the organization of a State Medical Society, the undersigned were appointed a committee of correspondence and, as such, directed to address you on that subject. It was proposed that the medical men of the State of Illinois should assemble in convention at Springfield, on the first Monday of December next, and then and there proceed to the complete organization of the Illinois State Medical Society—the Convention to be composed of one or more delegates from each County in the State. This proposition was unanimously adopted; and we now call upon you to co-operate with us in the consummation of so desirable a result.

"Hitherto we have been like a vessel cast upon a boisterous ocean, without compass or helm; we have acted solitary and alone, without harmony or concert; but when we see hundreds of our fellow-citizens and worthy friends annually sacrificed by the empirical prescriptions of charlatan professors, on the altars of ignorance erected within the very temple of Aesculapius, by rude and unskillful hands, is it not time for us to act? We think so; not, however, by declaring war against mountebanks and uneducated pretenders to the art of healing within our borders, but by digesting a plan that shall be calculated in its legitimate operations to benefit the people, instruct the unlearned, inform ourselves and elevate the entire profession above all mercenary considerations to a station of superior mental, moral and medical excellence. Already do our forests groan under the axe-man's hand, and our prairies swarm with a busy, free and enterprising population; in agriculture and commerce, we are rapidly approximating the level of the oldest States; our citizens are rearing colleges and universities for mental culture; our Divines and Lawyers have already attained a high rank and an elevated standing; and shall medicine be wholly neglected? Is law of more consequence than medicine? or property more valuable than life? If not, let us not be behind our sister states in our efforts to improve our profession, and place it on a level with that of law. We ask not the protection of legal enactment to sustain us. We place ourselves before the public on our true merits, having a strong and abiding confidence in the wisdom of the people. All we require is a concerted effort, to enable us to diffuse true and useful medical knowledge and this we ask. It is due to the profession and to humanity, now, and in all time to come. We hope, then, to see a general attendance on the day proposed.

"J. C. Bennett of Fairfield
C. V. Dyer, Chicago
A. W. Bowen, Joliet, Will Co.
M. Helm, Springfield
E. H. Merryman, Springfield



STATE MEDICAL SOCIETY.

KNOW ALL MEN BY THESE PRESENTS, That we, the State Medical Society of Illinois, do hereby confer upon Doct. Thomas W. Hennessy all the honors and privileges of our Professional Association; and that we hereby declare to the public, that the said Doct Thomas W. Hennessy above named, has been, upon proper evidence and testimony of his qualifications as a Physician and Surgeon, admitted a member of our Professional body by this DIPLOMA in conformity with our Constitution.

Given at Springfield, this 27th day of June, 1849.

John Todd Pres't.

John F. Charles V. Pres't.

Francis A. McNeill Sec'y.

CENSORS.

John C. Bennett, M. D.

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"Editors of all newspapers in Illinois were requested to publish the above once or more."—*Illinois State Journal,* Friday, June 19, 1840.

Whether a meeting was actually held on the first Monday in December we do not know. The next proof that the State Medical Society was an active organization lies in the document reproduced. Found in an ancient law-book at La Salle, Illinois, it is now in the possession of Dr. Charles Whalen, editor of the JOURNAL.

This interesting paper is a membership certificate in the "State Medical Society,' in nice form, printed as

a diploma, and issued "under the Constitution to Dr. Thomas W. Hennessey, of La Salle." It is dated Feb. 27, 1841, at Springfield, or nine years before the present Illinois State Medical Society came into existence.

Signatures on this diploma are those of "John Todd," president; John F. Charles, vice-president; Francis A. McNeill, secretary; "censors" John C. Bennett, William B. Egan, R. T. Edmondson, J. H. Lyons, W. J. Gibbs and E. H. Merryman.

The discrepancy in names of the secretary need not cast doubt upon the authenticity of either document. One must remember that the certificate is dated Feb. 27, 1841, eight months after the call was issued; moreover, C. F. Hughes acted as secretary throughout 1840. Probably a meeting had been held in January of that year. From *Items Relative to Early and Other Medical History of Illinois,* Vol. 1, Wm. O. Ensign, M.D., Rutland, Illinois, 1913, the following is taken:

MEDICAL SOCIETY OF ILLINOIS

Address delivered to the graduating class of Indiana Medical College at public commencement, February 18, 1847 by M. L. Knapp, M.D. —Chicago, 1847. Appended to the above named publication (N.W.M.&S.J. 9) find inside of cover "Fee Bill" "adopted by the members of the Medical Society of Illinois, at a meeting held in Springfield, Ill., January—1840." Also Resolution as to fees, signed John Todd, President, C. F. Hughes,* Secretary. Fees run from ordinary visit in town, $1.00 to gonorrhoea $10.00.

This work of Dr. Ensign is in longhand, and there is an obvious erasure under "January—1840," so we cannot be too sure of this date. Dr. Zeuch and others have searched diligently for the fee bill, but thus far with no results, so that its exact contents are not known. However, since Dr. Moses Knapp referred to it in his address to the graduating class of the Indiana Medical College, it must have been a model for its day.

The indications are that as soon as the actual convention was held, one of the first items on the order of business was the election of officers, and that John Todd continued as president with Francis McNeill as secretary.

According to information supplied to Dr. Zeuch by Dr. George H. Weaver of Chicago, there was sufficient enthusiasm displayed in the organization to keep it meeting annually until 1847. In that year a meeting was held in Springfield with Dr. John Todd acting as president and Dr. David Prince of Jacksonville as secretary. These officers may have continued for two more years.

Throughout the existence of the Society Dr. Todd was the motivating spirit. His experience in Edwardsville twenty years before had fitted him to assume the leadership of the new movement toward permanent organization of the practitioners of the state. One of the signers of the call in June 1840, president of the group from 1840 to 1847, and probably for the two succeeding years, a censor of the newly formed Medical Department of the Illinois College at Jacksonville, where he possibly taught surgery at the same time David Prince taught anatomy, possessor of the finest house in Springfield, member of the prominent Todd family into which Abraham Lincoln married, his influence must have been invaluable in keeping the Society together during its period of activity. When the Illinois State Medical Society took form in 1850, Dr. Todd was elected a member by invitation. At his death in 1865 a biographer said of him, "Dr. Todd was a man of good attainments and excellent character and left a fragrant memory."

Dr. Prince, Dr. Hughes, and Dr. Moses Knapp were the other active members of the 1840 group.

There is a simple explanation for the obviously incorrect statement in the first printing of the Constitution and By-Laws of the Illinois State Medical Society adopted in 1915 that gives the Ottawa Medico-Chirurgical Association credit for inspiring the convention held in Springfield on June 9, 1840.

As we shall see later the Ottawa society was not founded until 1849, and the only extant indication of its earlier existence is due to a proofreader's error occurring in an account of the proceedings of the Aesculapian Society of the Wabash Valley, published in the *Northwestern Medical and Surgical Journal* for November 1849. The article is headed:

> Proceedings of the Aesculapian Society at its annual session, held at Mt. Carmel, Ill., October 31, 1840

It recommends that the secretary enter into correspondence with the secretary of the Ottawa Medico-Chirurgical Society on the subject of appointing delegates to attend the Convention at Springfield when called. However the very next page continues with the record of proceedings of

*Later an organizer of Illinois State Medical Society in 1850.

the Aesculapian Society under the heading of Thursday morning, Nov. 1, 1849. Besides we know from its charter that the Society was incorporated in 1847.

1842—Whether or not the Society felt the need of legislative support for its program we do not know; but at any rate, in spite of previous discouragements along this line, in 1842 there was brought before the General Assembly "An Act to Incorporate the Illinois State Medical Society" and regulate the practice of medicine, which act was tabled.

1843—In 1843 there appears an act in the statutes assigning to parents or guardians the duty of reporting births to the county clerk; but this vestige of the act requiring registration of births and deaths, first found on the statutes in 1819, remained for a number of years the sole legislative stamp of approval for this much needed measure.

STEPS LEADING TO THE CONVENTION OF 1850

The Convention of 1850, which resulted in the formation of the Illinois State Medical Society, was the culmination of a series of attempts at medical organization begun in 1846.

The founding of Rush Medical College in 1843, the appearance of the ILLINOIS MEDICAL JOURNAL in 1844, the adoption of a National Code of Medical Ethics by the recently established National Medical Association—all gave impetus to the movement which resulted in four new local groups exerting an especial influence toward state organization. The Rock River Valley Medical Society, dating from 1846, the Lawrenceville Aesculapian Medical Society, incorporated in 1847, the Peoria District Medical Society, founded in 1848, and the Ottawa Medico-Chirurgical Society of 1849 comprised the list of new societies.

The fourth and last society to be mentioned occupies a peculiar position in regard to the State Convention of 1850. It was instrumental in initiating the Illinois State Medical Society, but supplied not one member to the Convention. The *Transactions* of the Illinois State Medical Society for 1895 give an interesting account of its origin and the part it played. "As an immediate successor to a medical society, institnted in 1847, and called the Medical Society of La Salle and Adjoining Counties, of which Dr. Joseph Stont was secretary, there was organized on January 1, 1849, in the city of Ottawa, the Ottawa Medico-Chirurgical Association."

The president of the association was Dr. Allen Howland. One of the first projects undertaken by the new society was the launching of a plea for a convention to be held in Springfield on the first day of January, 1850 for the purpose of organizing a State Medical Society.

The September 1849 issue of the *Northwestern Medical and Surgical Journal* carried an editorial comment as follows: "We owe an apology, which we cheerfully make—to the Secretary of the Ottawa Medico-Chirnrgical Association for an nnintentional omission to notice in our last number, their circular calling the attention of the profession of this state, to the importance of organizing a State Medical Society and calling a convention for the purpose at Springfield on the first of January next. We are happy to express our approval of, and co-operation in this project; but we doubt the propriety of the time appointed. The close of navigation at that time will have the effect of procuring but a meager attendance. —As the matter has been so long deferred, we would suggest that the convention be postponed until May, at which time we snppose a tolerably full attendance might be procnred.—We cheerfully accord to our Ottawa friends the praise of being the first to move in a matter of so much interest and importance to the profession in Illinois."

The immediate results of the notice were to distinctly discredit the efforts of the Ottawa Society. This notice had been sent not only to prominent doctors and to medical societies and publications but to the secular press as well. As worded, it proved to be a veritable explosive. It is reported to have been "expressed in such language as to excite contempt and ridicule at the hands of the newspapers, whose caustic criticisms resulted in the appointment by the local society of a committee to prepare resolntions disavowing the officiousness of the secretary. The report was a severe rebuke of the effusive style of the author, whose wordy effort they characterized as "bombastic literary nonsense."

In spite of the secretary's wounded pride and the creation of much local ill-feeling, the Society received a number of enconraging replies agreeing on the necessity for a state society. As a consequence, the call for a convention at Spring-

field was drawn up and sent to the *Northwestern Medical and Surgical Journal* for publication.

Official Call for a State Medical Convention
Office of the Secretary, of the
Ottawa Medico-Chirurgical Association
18th December, A. D., 1849

Editors Northwestern Medical and Surgical Journal:

GENTLEMEN:—At a regular meeting of the "Ottawa Medico-Chirurgical Association," held at the rooms thereof, on the evening of Monday, the 17th inst., Dr. Edward A. Guilbert offered the following preamble and resolutions, viz:

Whereas, it has been deemed advisable by sundry medical gentlemen, that an *official* call for a Convention of Physicians to assemble at Springfield, Illinois, at some future time, for the purpose of forming a State Academy of Medicine, should be immediately made, and *whereas,* it is esteemed very proper for those who have originated the movement, to make said *call,* Now therefore, be it

Resolved, That the "Ottawa Medico-Chirurgical Association" respectfully, and earnestly recommend that a State Medical Convention, convene at the Capital of the State, on the *first Tuesday* in June, A. D., 1850 for the purpose of forming a State Medical Association.

Resolved, That this (the Ottawa Medico-Chirurgical Association do hereby call such a Convention, and that these preamble and resolutions be signed by the President and Secretary of this body, and transmitted to the "Northwestern Medical and Surgical Journal," for publication.

On motion of Dr. D. D. Morrison, it was further

Resolved, That a Committee of Conference, consisting of three members of this Association, be appointed to correspond with the Physicians of Springfield, in reference to the arrangements incident to the convocation of said Convention.

These resolutions were adopted, and Drs. D. D. Morrison, Edward A. Guilbert, and Jonathan Pierson were appointed the committee proposed in the last resolution.

[Signed,]
A. H. Howland, M. D.,
President.
Edward A. Guilbert, M. D.,
Secretary.

The call contains one of the proofreader's errors apologized for by the editor, for "Morrison" should read "Thompson."

Immediately following its publication, the *Northwestern Medical and Surgical Journal* gave its official blessing to the enterprise over the initial "E," known to represent Dr. John Evans. In urging the importance of attendance, he did not fail to point out that at this season the country was generally healthy, the roads were good and the weather pleasant.

EARLY MEDICAL CONDITIONS IN ILLINOIS

Some of the difficulties and problems of the practitioner of the first half of the century we have already noted. He dealt for the most part with an unfriendly legislature in attempting to regulate the practice of medicine and subdue quackery and "irregulars" of the variety who called themselves practitioners on the basis of a Thomsonian certificate. Anyone who could afford to pay for it was permitted to prescribe for the sick without any medical study.

The very early practitioner made his rounds on foot or horseback, braving the rigors of winter in a bear-fur suit, cap and moccasins. He carried his medicines in a fur sack or wrapped up in a cloth and stowed in a corner of his saddlebags. Usually his bills were paid in trade.

In *Early Medical Chicago,* Dr. James Nevins Hyde relates that the spring of 1834 saw a perfect flood of immigration pouring in, and with it a sprinkling of doctors. "Prior to 1840, nine-tenths of all the physicians who had located themselves in this region, had done so with reference to pursuing agriculture, and with the avowed intention of abandoning medical practice; most of whom, either from the necessities of the case, or from finding more truth than poetry in pounding out rails, resumed their profession and divided their attention between farming and medicine."

About 1850 a change came, and until the end of the century we have the "gentleman" doctor. People began to wear "store clothes"; the doctor commenced to dress accordingly. It is related that in 1865 Dr. Wm. Lott Goodell wore a black broadcloth suit, a dress silk hat and morocco boots costing $17. He had a fur buffalo great overcoat for calls in wintry blasts.

Transportation was slow. There were few roads, and during the winter season rivers were closed to navigation. Herein lay one of the pri-

mary obstacles to early medical organization, perhaps the next most important being the fact that not many members of the profession could afford to travel or take the necessary time consumed in attending a medical convention.

At the 1889 meeting of the Illinois State Medical Society in Jacksonville, Dr. N. S. Davis related, "I started out from Chicago to attend that meeting here (he refers to the second session of the Society in 1852), and what kind of a journey did I have? I did not start from Chicago last night and be here this morning to breakfast. I had a journey by stage of one day and a good part of a night, then a ride on the Illinois River, then another piece of a ride on the construction train of a railroad on top of a load of ties, part way to Jacksonville, and I think we came into the city on a stage coach."

An entertaining sidelight on the early district society meeting is furnished by the reminiscences of the North Central Illinois Medical Association by Dr. Henry Zeising of Peru. He recounts how he and Dr. Woodbridge of La Salle hired the best span of horses and finest rig in town to attend a meeting in Wenona in the fall of 1878. On their arrival they found the society in session on the second floor of a large brick house. Comes this dramatic interruption, "About four o'clock the president adjourned the meeting—he had to milk the cow before dark."

During the early days the doctor had only a limited number of diseases to treat and these he cured (or failed to cure) with an even more limited supply of medicines, which he administered in "heroic" doses. Quinine, jalap, and calomel, with the possible addition of opium, were his usual stock in trade. Malaria and pneumonia were two of the diseases most frequently encountered, the former covering the terms ague, "shakes," "chills," intermittent or remittent typhoid and typhus, or "autumnal fever." Frequent mention is made of ophthalmia, which was treated with sulphate of zinc, sugar of lead, blue vitriol or nitrate of silver.

In 1883 Dr. John Murphy of Peoria wrote: "When I first settled in Peoria some thirty-five years ago (about 1848) the entire prairie was saturated with malaria. In fact, the entire area of central Illinois was a gigantic emporium of malaria."

Most of the surgical cases arose from accidents occurring in the woods, broken bones incurred by the felling of trees, injuries sustained from a glancing ax or falls received in the process of breaking horses.

Burns from kerosene lamps were another source of doctors' fees.

One of the chief difficulties encountered by the experimentally minded physician was in obtaining cadavers for dissection. As early as 1825 the practice of "body-snatching" must have been a real source of annoyance to the laity, for on January 3 of that year we find the Legislature passing the "Act to Prevent the Disinterment of the Dead." In those days before the advent of medical colleges the only means of obtaining bodies for anatomical purposes was to buy one outright or steal it—and stealing it was usually the simpler way.

Herein arose the greatest problem confronting the first medical colleges, and it proved the Waterloo of several. A letter from H. Paschal to the Illinois State Medical Society, dated September 22, 1924, relates the event which brought to a sudden and untimely end the Franklin Medical College established in St. Charles in 1842. On April 19, 1849 one John Rood, student, having stolen the body of a prominent young woman from a Sycamore cemetery and hidden it on a ledge near the college, a riot took place and the college was mobbed. John Rood was shot through the head and Dr. G. W. Richards was likewise wounded. The latter fled the town, and that was the end of Franklin Medical College.

At about the same time the Illinois College Medical School, at which the first lectures had been given in November 1843, closed its doors, partly, it is said, because Dr. David Prince refused to teach anatomy without cadavers, and these were so difficult to procure.

The repercussions of the St. Charles affair were felt by Rush Medical College, who had to weather a wave of unpopularity as a result.

In the *History of Medical Practice in Illinois*, Dr. Zeuch says, "That Rush Medical College eschewed the common practice of body stealing for dissecting purposes on account of the antipathy of the public toward the use of bodies for that purpose is beyond the credulity of unbiased historic opinion in view of the demand for material. The editor remembers a story (told to him by his mother) which seems significant. It was to the effect that at the funeral services, in 1878, of her father, who had shortly before his

death married again, and, as they thought, had died under suspicious circumstances, were three strange men. These strangers excited suspicion when they inquired of some friends where the body was to be taken for interment. When they departed in their buggy a son of the deceased followed the vehicle upon his bicycle and found that their destination was Rush Medical College!"

The matter of dissections was brought up time and again in the Illinois State Medical Society and was not finally settled until legislation was secured in 1887. Much dissatisfaction was felt even then, and we find the issue cropping out at least a decade later.

CONVENTION OF 1850

1850—On Tuesday, June 4, 1850 there assembled in the State Library Room at Springfield 15, or possibly 16, delegates of the 29 elected members of the Society. Dr. Boal listed those present as Samuel Thompson, Albion; William B. Herrick, Chicago; James V. Z. Blaney, Chicago; Edwin G. Meek, Chicago; John A. Halderman, Carlinville; Robert Boal, Lacon; L. G. Thompson, Lacon; Rudolphus Rouse, Peoria; F. A. McNeill, Peoria; E. S. Cooper, Peoria; A. G. Henry, Springfield; M. Helm, Springfield; S. A. Paddock, Princeton. These members were joined on Wednesday by Doctors B. F. Stephenson of Menard County and Dr. Jayne of Springfield. Dr. Edward Roe of Jacksonville may possibly have been a late arrival.

Transacting most of the business as a Committee of the Whole, the delegates elected officers, adopted a Constitution, By-Laws and Code of Ethics.

A list of the first officers of the Illinois State Medical Association follows:

President—William Herrick.
Vice-president—Rudolphus Rouse.
Vice-president—A. G. Henry.
Secretary—E. G. Meek.
Secretary—S. A. Paddock.
Treasurer—John A. Halderman.

The Constitution adopted required but four printed pages and covered but seven points: the sections were headed Title of the Society, Members, Meetings, Officers, Standing Committees, Funds and Appropriations, Provision for Amendments.

Physicians were to hold their appointment to membership either as delegates from local institutions, as members by invitation or as permanent members.

The meetings were to be held on the first Tuesday in June, never in the same place twice in succession.

Standing committees were named as follows: Arrangements, Practical Medicine, Surgery, Obstetrics, Drugs and Medicine, Publication.

Funds were to be raised for current expenses only by an equal assessment upon each of the members.

The Code of Ethics adopted was that of the National Medical Association, with two minor changes in wording.

It is interesting that one of the first acts of the new society was to appoint a committee of three to memorialize the Legislature for a bill to register births, deaths and marriages.

An initiation fee of $2 was instituted, the sale of patent or secret *nostrums* discouraged and organization of local medical societies resolved on.

The *Northwestern Medical and Surgical Journal* was to have permission to prepare from the minutes and publish an abstract of the proceedings. It was also specifically stated that the committee was to keep meteorological records.

The history of the Society is continued in the *Transactions*.

1851—Peoria. The first delegates were elected from the Illinois State Medical Society to attend the forthcoming convention of the National Medical Association.

It was written in the *Transactions* that during the whole session there was manifest the best feeling between the members in the discussion of the various topics.

1852—Jacksonville. In the second year of its existence the membership of the Society had jumped to 77. In his address, Dr. Rudolphus Rouse, the new president, mentioned that "while not so much interest is shown in the Society as some might wish, however it is increasing."

The Society adopted an amendment in regard to membership providing that delegates should receive their appointment from permanently organized medical societies, from medical colleges, hospitals, lunatic asylums and other permanently organized institutions of good standing.

A resolution was adopted that since an effort was being made to induce the Legislature to appropriate college and seminary funds, either by establishing a state university or by distributing

funds to colleges already established, all regularly organized medical colleges should be placed on the same footing with the best literary colleges in any distribution or appropriation.

1853—Chicago. At this meeting it was resolved that every motion should be made in writing and handed to the secretary.

The secretary of each county or local society was requested to report on the most prevalent diseases of his district and forward the same to the chairman of the Committee on Practical Medicine at least one month before the annual meeting.

1854—La Salle. Proof that the newly formed society was having to battle indifference or opposition is shown by the fact that Dr. Davis expressed surprise and regret that so many of the standing committees for the past year had neglected their duty, and in the suggestion by Dr. Brainard that other members of the profession were not cooperating. The Society had but 59 paid-up members.

Republication of the Constitution and Code of Ethics was authorized.

A committee was appointed to obtain the names of all regular members of the profession throughout the state, with their addresses, to encourage the formation of county societies.

The Society resolved that before a candidate was nominated for permanent membership, it must be ascertained that he was not interested in the sale of patent medicines or *nostrums*. Also, Illinois physicians and distinguished physicians from other states might be elected honorary members by unanimous vote.

1855—Bloomington. It was decided that publication of a report did not mean the adoption by the Society of the views expressed therein.

The Legislature was to be petitioned with regard to additional provision for the insane and establishment of an institution for idiots.

In the matter of representation in the National Medical Association, if a member were unable to act, the president might appoint another member, and if a vacancy occurred at the meeting, the delegates might fill it with anyone present. It was this ruling which was later responsible for the difficulty in seating the first woman delegates to the A.M.A.

Dr. Davis called attention to the fact that at the end of five years there were as many members in attendance as the Medical Society of New York had.

1856—Vandalia. Dr. Thompson made a plea for accurate recording of symptoms and treatment which gives some idea of the difficulty in obtaining statistics in those times. "But it is careful observations recorded, not remembered, that are needed as contributions to medical science. It is very true that it is very difficult for a physician, in daily, laborious, and extensive practice, to examine carefully, amid all the noises and confusion of a country log-cabin, with the cooking, and creaking, and squealing around, and as difficult to record such observations when made." Another difficulty brought out in the report is that "there is no agreement among writers as to what shall be called typhoid fever."

From this date a permanent secretary was to be chosen to keep all records, books and papers of the Society, as well as an assistant secretary to be elected annually from the place where the next succeeding meeting was to be held.

1857—Chicago. The state of the treasury at this time may be judged from the fact that out of 122 members, 31 had paid their dues. For this reason most of the matter designed for the *Transactions* was first inserted in the *Northwestern Medical and Surgical Journal.*

1858—Rockford. A resolution was adopted to the effect that "the hireling system is not compatible with the true interests of the profession; and no member of the Society shall be allowed to hire his services by the month or year, to families or individuals."

If papers were over 10 pages foolscape in length, only a synoptical abstract was to be read.

All the back numbers of the *Transactions* were to be procured and bound.

1859—Decatur. Probably as a concession to the invited guests—all clergymen favorable to regular medicine—it was voted that in the future all meetings of the Society were to be opened by prayer. To the guests were addressed the remarks of Dr. H. A. Johnson on "Human Dissection," in which he answered objections to the study of practical anatomy, hoping thereby to gain public approval for the dissection law.

For the first time the Society took cognizance of public health by appointing a Committee on Hygiene and Sewerage of Cities.

Because there were only 58 paying members, it was decided to omit the names of non-paying members from the *Transactions* if dues were not in by September 1.

1860—Paris. Henceforth the time and place of each annual meeting was to depend on the vote of the Society. Permanent members were not to lose their membership by moving out of the state.

Conditions of the A.M.A. are reflected in a resolution to the effect that the Society would use its influence to change the custom of electing officers of the National Medical Association from the place where the meeting was held, and encourage their election on merit.

1861-1862—No meetings, due to the absence of so many members in the Civil War.

1863—Jacksonville. As a sign of the times, the report of the Committee on Surgery was divided into civil and military.

A note of humor appears in the resolution that Prof. Davis, if it were not incompatible with his other duties, be requested to write an essay upon the "Deleterious Effects of the Use of Tobacco upon the Human System, and especially upon the example and bad taste of the members of our profession who habitually use it.

1864—Chicago. In order that the *Transactions* might not be delayed in coming out, all reports of committees and volunteer communications must be complete and delivered to the permanent secretary before the first of July succeeding the meeting at which they were read.

Two problems were considered: fees of medical witnesses in courts of law, and reasonable compensation for surgeons and assistant surgeons in the U. S. army.

1865—Bloomington. The Society passed a series of resolutions mourning the loss of President Lincoln and commending his example to the youth of the land.

1866—Decatur. It was recorded in the minutes that this meeting had the largest attendance of any in its 16 years of existence, with 261 members on its roll.

However, the financial affairs of the Society were not encouraging. Dr. N. S. Davis, as permanent secretary, suggested publishing the proceedings of the Society in the *Chicago Medical Journal* or the *Chicago Medical Examiner*. The committee to whom the matter was referred demurred, recommending that the proceedings be published in pamphlet form.

1867—Springfield. Permanent members were granted the right to vote.

An amendment was adopted fixing the regular annual meetings on the third Tuesday in May.

The Quincy Medical Society was refused representation because it accepted members expelled from the Adams County Medical Society.

A Committee on Necrology was appointed to preserve statistics and memorial records of deceased members.

There was a heated debate among the physicians present on the advisability of eating fresh fruit during the season when cholera was prevalent. The final decision was that "moderate use of ripe fruit taken at ordinary meals is not objectionable."

The Committee on Legislation was instructed to consider the propriety of urging on the Legislature the passage of a law requiring railroad companies and others using machinery to be responsible for expense of board, nursing, medical supplies and medical attendance in case of injuries received in performance of their duties, during process of recovery not exceeding six months.

1868—Quincy. The Constitution was amended to the effect that the term of office of the president and vice-president should commence at the next annual meeting after their election.

The Society set out to investigate what legislation, if any, was necessary to secure the rights and comforts of the insane who did not have the benefits of the Illinois Hospital for the Insane.

1869—Chicago. At this meeting it was reported that only one of the members present in Springfield in 1850 was still in attendance.

After twelve years of service Dr. N. S. Davis resigned as permanent secretary.

For the first time the matter of legalizing the placing of the insane in institutions on certificate instead of requiring a jury trial was considered by the Society.

It was decided that since the Legislature would do nothing toward regulating the practice of medicine, and twenty-five years of effort had failed to get concerted action from medical colloges, the profession itself would have to take action. It endorsed legislation proposed by the National Medical Association establishing a

board of five censors in each state to examine candidates. If adopted by two-thirds of the states, the National Association planned to deny representation to the nonconforming states.

1870—Dixon. The Society voted to support and recommend only colleges which imparted the most thorough training, and to urge the trustees to carry on improvement.

It was recommended that legal provision be made to insure persons who had been acquitted of capital crimes on the plea of insanity being sent to lunatic asylums.

1871—Peoria. The motion proposed in 1863 to appoint a board of censors to attend and participate in examinations of the Chicago Medical College was finally acted on and censors appointed.

In the report on Cataract by E. L. Holmes we are told that removal by couching had become malpractice.

1872—Rock Island. A resolution was adopted that medical men should refuse to testify as experts in courts where purely expert opinion was required until a reasonable fee was paid.

The echoes of the Chicago fire are to be found in the records of this meeting. The treasurer acknowledged his indebtedness to Dr. M. M. Grannis for his special effort in rescuing the book of records from the great Chicago fire of October, 1871, in which was contained a full statement of the records and finances of the Society for the last ten years. Fergus' Sons were to be paid a sum not exceeding $100 to compensate them for their loss on the 1871 edition of the *Transactions,* burned in the fire.

In the future a professional short-hand reporter was to be employed by the permanent secretary to report *verbatim* all the proceedings.

1873—Bloomington. The Society named a Board of Censors whose duty was to consider names for membership.

A violent debate was held on the question of whether to devote the entire time of the convention to business, or to make allowance for visits to various institutions and some entertainment. The latter was agreed on.

In a paper on the "Hygienic Management of Children," N. S. Davis made a plea for sanitary improvement of dwellings and establishment of free parks.

1874—Chicago. Henceforth names for recommendation to membership were to be accompanied by the name of the medical college from which the physician was graduated. In addition every person presenting a name for membership was to be responsible for payment of dues—if unpaid, the election was void.

The Congress of the United States was to be requested to abolish duties on scientific books.

1875—Jacksonville. Following the lead of the National Medical Association it was voted to ask for legislation to place the medical corps on an equal footing with the officers of the other staff corps of the army.

The Committee on Publication recommended that henceforth the *Transactions* be bound in cloth.

A new Constitution was adopted.

1876—Urbana. Sarah Hackett Stevenson read a paper on "Progress in Physiology," the first to be given before the Society by a woman.

1877—Chicago. Dr. C. F. Barnett offered to withdraw charges against the Macoupin County Medical Society, and those against the Jersey County Society were dismissed.

In James N. Hyde's address of welcome he mentioned the union of the old *Medical Journal* and *Medical Examiner,* now the *Chicago Medical Journal and Examiner,* and continues: "I will say, in praise of the periodical, that it probably has more editors to the square inch than any other similar journal published in the country."

President Fitch's address recounts the controversy stirred up at the 1876 meeting of the National Medical Association over the seating of Sarah H. Stevenson as the first woman delegate ever to be admitted.

On May 21, 1877, the State Board of Health was finally created. On the board were J. H. Rauch, W. M. Chambers, A. L. Clark, H. Wardner, R. Ludlam, J. M. Gregory and Newton Bateman.

The Society adopted a resolution that the Chicago Medico-Historical Society be requested and authorized to publish an annual medical register of the State of Illinois.

Dr. Wilbur's report on idiocy announced the completion at Lincoln of a 300-pupil building.

1878—Springfield. The passage of the Medical Practice Act of May 21, 1877, was announced.

The Society adopted a new Constitution and By-Laws, which substituted a Judicial Council

of nine for the Board of Censors, added two members to the Committee on Arrangements, and to the standing committees added one on Gynecology, Ophthalmology and Otology.

1879—Lincoln. The Society approved the efforts of the Hon. Wm. R. Morrison to repeal the duty on quinine.

It was decided to ask for the establishment of a board of hygiene to inspect public schoolhouses, sites and plans.

G. W. Jones mentioned that there was much maudlin excitement during the year over the abstraction of a few bodies from family cemetery lots. There was a reaction, he believed, in favor of the profession.

1880—Belleville. The permanent secretary requested the support of the Society in securing the adoption of the metric system.

It was decided to issue a state register every year.

1881—Chicago. A. R. Jackson referred to the passing of the "family doctor" and the advent of the specialist.

Any member who had paid his dues for fifteen consecutive years was not to be dropped, but he was to receive the *Transactions* only if he paid dues.

1882—Quincy. Dr. Rauch of the State Board of Health discussed the effect of sewage from Chicago on the Illinois River, tending to minimize the effects.

1883—Peoria. The Society appropriated $250 to supply the members of the profession with blanks to fill out to obtain statistics from which to find the relations, etiologically, between appreciable meteorological and topographical conditions and the prevalence of acute diseases.

Mention is made of the abuse of medical charities by people who flocked to the city to receive the benefits of free clinics, who should remain at home and pay fees.

N. S. Davis declared that "germ theories" of disease and "germicide remedies" were running too rampant.

From the report on ophthalmology we learn that the recent introduction of electric lights had created problems in the profession.

1884—Chicago. We are informed that during the past winter there had been difficulty in securing anatomical material in Chicago.

A committee of three was appointed to report to the Secretary on the wisdom, propriety and best methods of aiding any public medical libraries.

1885—Springfield. In order to have papers published promptly an amendment was made appointing an officer intrusted with the duties of editor, who should be chairman of the Committee on Publication.

1886—Bloomington. A resolution was made against the use of tobacco and other narcotic poisons.

In the president's address is the first recommendation that instead of the *Transactions* the Society publish a journal. The committee did not favor a change.

There was a long discussion of Pasteur's cure for hydrophobia. Doubt was expressed as to his ability to diagnose the disease, although it was admitted that there was something in his theory.

1887—Chicago. The Society appropriated $25 to get a permanently bound set of the *Transactions* and acquire missing copies, for there had not been a complete set in possesion of its officers since the Chicago fire.

It was resolved that the Society use its influence in securing legislation requiring the filling of all offices having medical functions with medical men.

1888—Rock Island. This meeting was held under difficulties due to an overflow of the river. The delegates were met with boats and rafts, and the meeting had to be postponed until more suitable quarters were found, since the theater in which they were to meet couldn't be heated because of water in the basement.

It was noted that in 1887 the feature was incorporated of including portraits in the *Transactions*.

A committee was appointed to secure a charter for the Society and revise the Constitution.

A report was given on the possibilities of Volapük as a universal language in relation to the medical sciences.

1889—Jacksonville. The session was taken up with the revision of the Constitution and By-Laws. The matter of a charter again came up. The Society was invited to attend the next meeting of the Pharmacopoeal Society if it were incorporated.

Dissension in the ranks was evident, some of the members from the southern part of the

state feeling that the Illinois State Medical Society was only another name for the Chicago Medical Society. They complained that the committees were composed of members from Chicago or the northern part of the state.

1890—Chicago. A new Constitution was adopted which provided for three Sections with a chairman for each, in place of so many committees.

Dr. Poole of the Newberry Library, Chicago, spoke on the plan to start a medical library and made a plea for monographs.

A bill was discussed for the separate accommodation of insane criminals. Also there was agitation to arouse the interest of the medical profession to see that institutions for the insane were in charge of worthy persons, not political appointees.

1891—Springfield. The Society pledged itself to have a state exhibit at the coming Columbian Exposition.

1892—Vandalia. The first plea for preventive medicine was voiced by B. M. Griffith, who described it as the highest and most humane phase of sanitary science.

1893—Chicago. The Illinois State Medical Society condemned the American Medical Association for inserting ads for secret preparations in its journal.

At this time the list of registered physicians contained 5,500 names, with an attendance of 450 members at the meeting of the Society.

The Committee on Medical Legislation reported that it was working on bills for the feebleminded, new provisions for the Medical Practice Act, an act to prevent or control the sale of *nostrums*, inspection of milk, medical expert testimony and some hygienic measures.

1894—Decatur. The Society endorsed the scheme for an epileptic colony.

It was resolved to secure appropriate legislation to prevent blindness due to ophthalmia of the new-born.

Passage of the Lunacy Bill on June 16, 1884, was mentioned.

1895—Springfield. A special report on the History of the Illinois State Medical Society was given by Dr. William Ensign.

The Society advocated an appropriation by the State Legislature for sustaining a pathological laboratory in hospitals for the insane.

1896—Ottawa. An amendment was adopted to have a committee on society history.

A demonstration of roentgen rays was given by Dr. E. M. Weis.

Dr. John B. Murphy of Chicago, pioneer in producing successful circular anastomosis of the blood-vessels, gave a demonstration in which he used the "Murphy button."

1897—East St. Louis. The Society appointed delegates to the International Medical Convention to be held in Moscow.

A report was given on the State Vaccine Laboratory, established by a grant from the state in 1895 on the campus of the University of Illinois.

Present at this meeting was Dr. A. X. Illinski, who practiced in Cahokia when it and Kaskaskia were the principal settlements in Illinois and he did most of the doctoring for the region.

1898—Galesburg. Through action of the Society the bill had been vetoed exempting osteopaths from the Medical Practice Act.

Conditions in medical education in the state are revealed in the announcement that when the state board went into effect there were five medical colleges in the state, and in 1898 there were 25.

The Society approved action of the delegates, taken at the A. M. A. Convention, to raise $2,000 for the Rush Monument.

In the absence of Dr. Nicholas Senn, who was to have delivered the address on surgery, Dr. John Finley gave a humorous addres on "Intellectual Bacteriology."

The year 1898 was the last in which the *Transactions* were published. The following session of the Society saw the appointment of a committee whose task it was to journalize the proceedings.

ILLINOIS STATE MEDICAL SOCIETY JOURNAL ERA (1899-1940)

The 1899 meeting of the Illinois State Medical Society in Cairo may be said to mark the organization's awakening to its place and power in the affairs of the world of medicine. It was no longer to be a local group of scentific men meeting as it were in scientific isolation, but a professional body magnificently realizing its responsibility.

J. T. Pitner presides over the 260 delegates. (Of the state's 8,000 regular practitioners, 540

were members.) A committee appointed to study the matter, recommended journalization begin July 1, 1899, publishing monthly, the object being increase in membership; publication committee composed of E. W. Weis, chairman, H. N. Moyer and G. N. Kreider, gets out first issue as scheduled. Illinois is second state adopting journal idea, and first to own its journal. It is decided to invite 4,000 members of local societies to jubilee meeting to be held in 1900 at Springfield, where the Society was born, to celebrate 50 years of Society's existence, reckoning from the 1850 meeting, evidence of the 1840 convention not having turned up. The $50 required by the legislative committee "scraped the bottom of the treasury." Matters discussed: the 1899 medical practice act; advisability of paying salaries to members of the State Board of Health. Resolve to recognize licenses issued by states with equivalent requirements.

Illinois Society for the Prevention of Consumption organized in Chicago.

Senatorial investigating committee inquires into affairs of Cook County Hospital.

Private telephone lines for the convenience of patrons erected by physicians in central Illinois.

State Board of Health holds that a physician associated with unlicensed practitioner is guilty of unprofessional conduct.

E. V. D. Morris, Galesburg, was probably the first physician in the state to employ an automobile.

1900—University of Illinois takes lease on College of Physicians and Surgeons for 25 years.

Chicago man stopped by 1899 medical practice act from selling diplomas, organizes National Association of Liberal Physicians and Surgeons "to attack the despotism of state boards of health."

State Board of Health bars unvaccinated children from public gatherings during smallpox scare.

Physicians' Club of Kewanee goes on record against mention of members' names in newspapers.

Jubilee meeting at Springfield. Veterans of Society attend. Total expense of meeting $295.81; total receipts $567.50. About 450 attend.

Society membership increases 40 per cent in year, making 675 members. Journal averages 1,250 copies. Five county societies formed in year. Secretary receives honorarium of $350, treasurer, $50. Attempt to name Springfield permanent meeting place.

Sangamon County Medical Society condemns spitting in public. Of 1,087 members of local Chicago societies only 187 are members of state organization.

1901—United States District Court sentences president of Metropolitan Medical College to jail one year, fines him $500.

Members of State Board of health to be paid.

Legislature passes bill on vital statistics, with penalty.

Marie J. Mergler, Chicago, first woman to pass examination for intern at Cook County Hospital, dies May 8.

Journal accepts advertising.

Chicago Medical Society honors Nathan Smith Davis at banquet October 5.

George N. Kreider appointed editor at Peoria meeting of Society.

1902—Memorial Institute for Infectious Diseases founded in Chicago for study and treatment.

Supreme Court rules magnetic healers and osteopaths must have State Board license in order to practice.

Society has more than 1,200 members at time of meeting in Quincy. Rival delegations from Rock Island County appear and special committee finds in favor of medical association and against medical society; advises unity. Constitution revised to conform with A.M.A. Constitution and entire membership of 90 local county societies become members of state organization, making a total of 3,650, largest state society in world.

Kendall County Medical Society reports "A very pleasant and profitable time was spent discussing the subject of fees."

September typhoid epidemic in Chicago traced to milk, dirt, flies or water. The second city of the land is sending children to school with bottles of boiled water under their arms.

Professor Adolph Lorenz visiting United States says, "Perhaps the most curious (experience) was in Chicago. The board of health there made me undergo an examination in medicine, although I think I know something of my branch of my profession. Curiously enough, some weeks later they made me a doctor of laws, though I know nothing of law."

1903—Dunning Institutions reorganized. Dunning has 1,632 insane; 1,030 in poorhouse; 94 consumptives.

House of Delegates transacts business of Society for first time at Chicago meeting. Judicial Council advises discontinuance of Peoria Medical Journal and of Journal of Morgan County Medical Society and transfers their advertising and subscriptions if possible to Illinois Medical Journal. State divided into 9 councilor districts and councilors chosen.

Frank Billings has unique distinction of being elected president of A.M.A. two years in succession.

H. J. and W. T. Steward open institution in Chicago for treating diseases by apparatus designed by Finsen, Oudin d'Arsonval and others.

Vital statistics act passed.

College of Physicians and Surgeons makes radical change in curriculum, introducing elective courses in junior and senior years.

Drs. Billings and Patrick announce Cook County institutions now free of "pull" and all positions at Dunning, excepting superintendent, on civil rating.

1904—J. W. Pettit reports for committee on tuberculosis prevention, giving plan for establishment of tent colony at Ottawa to demonstrate

methods discussed at meeting of Society at Bloomington. During year Journal circulation grows from 1,500 to 4,500 and from 48 pages to 132.

Ottawa tent colony opens July 1 with 2 patients.

Sanitary investigation of Illinois, Mississippi, Missouri Rivers results in report that great flow of Lake Michigan water through canal into the Illinois has so diluted sewage that river is purer today than in 1899 prior to opening of drainage canal.

Staff of County Hospital reduced to 65 and merit test provided for appointment to it.

Beginning with January, 1905, 6 issues is a volume of Journal.

J. W. Pettit says spitting ordinance was at first jeered at by Ottawa citizens.

1905—Chicago Medical Society, which is the society for Cook County, has 11 branches with about 1,600 members and has own medical defense organization.

Illinois State Association for the Prevention of Tuberculosis organized, January 19.

Subscription price of Journal reduced from $3 to $2. Deficits of past two years wiped out and 13 future issues of Journal provided for. Under amendments to Constitution and By-laws Medico-Legal Committee consists of 3 members from Cook County and 1 from each other county, members to be chosen by House of Delegates, and fund to be established to provide legal aid to members. Failing to get a legislative appropriation, Ottawa tent colony incorporated.

Doctors say they fail to register births because they are not paid as law provides.

1906—F. Billings, Rabbi Emil G. Hirsch, Miss Julia Lathrop, John T. McAnally appointed to State Board of Charities.

World wide crusade against venereal disease.

Chicago Board of Education decides to have public school pupils examined for tuberculosis. Superintendent to keep tuberculous children from schools.

Chief Collins of Chicago police details two detectives to ride on Northwestern elevated railroad and arrest all violating anti-spitting ordinance in cars used by women.

Dr. McCormack of A.M.A. makes organizing tour of state and reports great activity of quacks and failure of Society and State Board of Health to work together.

Medical defense fund agreed on at Springfield meeting. Illinois among first of state groups to adopt uniform defense. This is a great factor in increasing membership. Society opposes reduction of fees to old line life insurance companies. A medical education committee is appointed. Unusual feature of meeting is clinics at hospitals for diseases of ear, nose, throat.

Chicago Medical College formally merged with Northwestern University, after period of affiliation.

State Board of Charities suggests a state psychopathic institute, hydrotherapy, uniform and complete medical records, more humane and intelligent care of charges.

1907—Physicians may collect for testifying at trial only usual witness fee.

Legislature condemns clinics at Elgin Asylum as not beneficial to patients.

Physicians assigned to city ambulance service in Chicago for first time.

With organization of Franklin County Medical Society state completely organized.

State meeting at Rockford. At this gathering it was pointed out that from now on president of Society must give a great deal of time to the state organization. Complimentary banquet given for J. H. Hollister and W. O. Ensign, medical pioneers.

Idea of admitting homeopathic and eclectic societies to benefits of legal defense fund endorsed.

President Percy warns profession that it must change attitude on newspaper advertising.

Charge made that 25 per cent of population receives medical charity, while one-half of 1 per cent receives other charity.

Chicago Medical Society committee on criminal abortion has Chicago papers drop advertisements from abortionists.

Chicago carries on campaign against baby farms.

Illinois branch of Public Health Defense League organizes to enlist active support of laity to combat quackery, prevent food adulteration and drug substitution, prevent sale of narcotics and alcohol disguised as patent medicines, prevent circulation of indecent medical advertisements and advocates establishment of a national department of health.

1908—Legislature adopts law regulating sale of cocaine.

General Assembly passes Glackin law authorizing cities and villages to establish and maintain sanitariums for treatment of tuberculosis.

Governor appoints committee authorized by General Assembly to investigate occupational diseases and report at next meeting of assembly.

W. O. Ensign reports that Medical Society of Illinois met at Springfield, January, 1840, and adopted a fee bill with resolutions governing its enforcement. John Todd was president and C. F. Hughes, secretary.

Board of Charities secures compulsory training schools for nurses and attendants of state institutions, hydrotherapy, better recreation and industrial re-education, uniform records established and other necessary improvements.

Possibility discussed of publishing JOURNAL weekly, at Peoria meeting.

1909—New milk law requiring pasteurization of all milk products except those from cows which have passed tuberculin test, effective January 1.

Vasectomy bill endorsed at Quincy meeting. Committee appointed to work with State Board of Health and national committee for suppression of ophthalmia neonatorum. New Charities Administration Law approved, provides management of institutions by five member Board of Administration at salary of $6,000.

Harvard, first school for tuberculous children, opened in Chicago with 30 pupils.

Institute for Feebleminded at Lincoln, first of its kind in United States, opens to study minds and proper employment of inmates.

Illinois Medical College affiliates with Loyola University.

1910—Interest at fever heat over charges on State Board of Health and A.M.A. at Danville meeting. House of Delegates called to order Tuesday evening. President Cotton adjourns meeting and rump session meets under Vice-President Stubbs to further consider the matter of separate board of examiners. Storm over this rumbles on for months. Carnegie Foundation for the Advancement of Teaching reports too many doctors in Illinois of whom too many have trained in inferior schools. Trustees of Northwestern University Medical School increase requirement of preliminary collegiate education from 1 to 2 years. Legislative committee organizes forces to secure legislation.

1911—Beginning January 1 no new license issued to any milk dealer unless his milk supply is properly pasteurized or from a dairy tuberculin tested during the year.

County secretaries notified that each county should have regularly appointed delegates to state meeting.

At Aurora meeting there is furore over society delegates, many of whom are not properly appointed. Dr. Percy attacks present organization of Chicago Medical Society. Legislative committee reports passage of bills providing $60,000 for Medical School of the state university; temporary license for five year students; establishment of new insane hospital and new institution for crippled children. Hardin, Johnson, Saline and Pope Counties suspended.

1912—League for Medical Freedom campaigns in Illinois under leadership of Mr. Joseph Mason, former secretary Illinois State Board Civil Service Commissioners, against the medical profession.

At Springfield meeting, spread of knowledge on sex hygiene endorsed. The Medico-Legal Committee, lost its first malpractice suit. Section on public health and hygiene organized.

According to plea filed with county clerk at Elgin, ballots of last general primary in Kane County reek with diphtheria germs and recount might cause epidemic.

American College of Surgeons incorporates November 25 at Springfield.

1913—Society has 5,708 members. Has organizer from A.M.A. in field canvassing for members.

University of Illinois accepts deed of College of Physicians and Surgeons from alumni, and college becomes medical school of university.

At Peoria meeting silver tea set given to H. N. Moyer, chairman of Medico-Legal Committee in recognition of his services. JOURNAL prints 6,100 copies each month. Revolution in Society puts Cook County on top, culmination of groundswell beginning in 1910. Chicago delegates in complete control, meeting ends without session of House of Delegates. George Kreider resigns editorship.

About 75 per cent of members insured against malpractice suits and H. N. Moyer suggests group insurance to save cost.

Clyde D. Pence as acting editor and Henry G. Ohls as managing editor, take over the Journal, changing its style, enlarging the page.

Rush Medical College makes fifth clinical year as intern or its equivalent compulsory for class entering in 1914.

1914—Society unanimously condemns American College of Surgeons at Decatur meeting for "presuming to say who shall practice surgery." Illinois State Surgical Society "plans to let the public know who can give good surgical service." President Charles J. Whalen gives Society a business administration, solicits nonmembers to join, drops members in arrears and brings membership from 5,532 to 6,093. Iroquois-Ford Medical Society raises obstetric fee from $10 to $15 with mileage added.

First building of new Cook County Hospital opened August 15.

October issue of Journal, containing transactions of third annual meeting of Alienists and Neurologists at which they outlined comprehensive program for mental health.

1915—Office of internal revenue collector in Chicago busy with applications of physicians and druggists for licenses under Harrison Anti-narcotic Law.

House of Delegates adopts new Constitution and By-Laws at Springfield meeting. Resolve to instruct delegates to A.M.A. to use every honorable means to prevent recognition of American College of Surgeons. In future no medical defense of member not holding receipt for dues, and members in arrears will be dropped. State Board of Health to revoke licenses of illegal practitioners, revision of occupational disease law, birth and death registration. Cancer commission appointed.

Standards for "other practitioners" elevated after September 1 with educational requirements approaching that for physicians.

Ben Reitman, after serving 60 days in New York jail for advocating birth control, returns to Chicago to start similar campaign.

Cost of newsprint prompts Journal to ask contributors to condense articles.

University of Chicago to extend undergraduate course from 2 to 4 years.

1917—Society opposed to 8-hour law for nurses and other working women.

Consolidation bill passes, creating State Department of Public Health and Department of Registration and Education to handle work of old State Board of Health, takes effect July 1.

Bloomington meeting draws large attendance despite war, and Society prepares for great demand of government. Sadie Bay Adair, Chicago, chosen second vice-president is first woman to hold office in Society. House of Delegates pledges support to government and resolves to care for interests and patients of physicians who serve, returning 50 per cent of such fees to absent member's family. Compulsory Health Insurance committee named.

Bayard Holmes deplores decrease in students of reputable medical schools while cults increase. War takes 15,000 medical students.

Chicago College of Medicine and Surgery merges with Department of Medicine of Loyola University.

Tri-City Medical Society pledges $100 a month to any member called to war service.

1918—Announced at Springfield meeting that the Illinois plan for care of returned tuberculous soldiers is being adopted by other states. University of Illinois College of Medicine permits students to complete required course in 3 years instead of 4. Government calls 1,700 physicians into service.

1919—La Salle County Tuberculosis Sanitarium at Ottawa, first of 10 to be built under Glackin Law, dedicated February 2.

Council recommends enactment of law providing equitable representation on advisory committee for registered nurses, as the present nurses' board composed of graduate nurses has brought a condition much against public welfare and is trying to make existence of small hospitals impossible.

President Fiegenbaum reports at Peoria meeting, more than 50 per cent of district councillors in service, and Mrs. Gilmore carries on as secretary in absence of husband. House of Delegates rescinds hasty endorsement of annual registration of physicians act at 1918 meeting; approves of committee on hospital standardization. Charles J. Whalen chosen editor of the JOURNAL, to take charge in August.

Journal announces "for first time in the history of Illinois accurate mortality figures available."

Chicago Training School for Home and Public Health Nursing, graduates first class of more than 800. This is a two months' course to make up for shortage and provide for a possible recurrence of influenza epidemic.

1920—Medical veterans of war and those who served government in any way met with Society in Rockford to organize the Illinois Chapter of the Medical Veterans of the World War. House of Delegates favors states rights; instructs delegates to A.M.A. to oppose state medicine, compulsory health insurance, county and state health agencies and "allied dangerous Bolsheviki schemes." Committee on Standardization of Hospitals decides hereafter Illinois State Medical Society is to do the standardization.

Committee on Medical Education and Hospitals of the Society and representatives of Illinois Hospital Association and of medical colleges decide that to be eligible to train interns, hospitals must have 25 beds.

1921—John R. Neal, Springfield, heads Legislative Committee. Society fights Sheppard-Towner bill.

Medical Practice Act of 1917 held unconstitutional by State Supreme Court.

Society takes note of the monetary collapse at Springfield annual meeting. Comments that this organization appears to be the only state group to pass resolutions condemning the Sheppard-Towner bill. Chas. E. Humiston talked against bill before Congress.

1922—Sheppard-Towner bill becomes law; Illinois profession organizes to prevent state cooperation.

Wm. Barnes, Decatur, plans to sell collection of butterflies and moths, said to be largest, most valuable private collection of its kind in the United States, to Smithsonian Institute and give proceeds to Macon County Hospital.

Society reports success at A.M.A. meeting in getting passed the resolutions it proposed, including definition of state medicine. House of Delegates of Society at Chicago meeting fixes dues at $5.

Society asks members to contribute to fund for lay publicity campaign authorized by House of Delegates.

State admitted to registration area for births.

1923—Legislative Committee of Society prepares new medical practice bill, which is introduced in Legislature.

Reported at Decatur meeting that Council during past year inaugurated publicity bureau to disseminate knowledge through lay press concerning profession's contributions to humanity, and to counteract similar propaganda by cults.

Cooperation with maternity act defeated. Malpractice suits and cost of defense increase.

United States Public Health Service estimates Illinois spent $30,000,000 last year for patent medicines and less than $500,000 for public health.

Lay Publicity campaign to begin at once in properly organized counties.

1924—Society notes with pleasure at Springfield meeting that Marcus Kavanaugh declared

new medical practice act constitutional. Society resolves to ask Department of Registration and Education not to permit physician from a foreign country lacking reciprocity with the United States to take state board examinations until he has full citizenship. Believed that fight to oust State Department of Public Health out of practice of medicine is temporarily won except for state ward and care of indigent. Society approves county clinic for indigent poor at Quincy.

William Allen Pusey president-elect of A.M.A.

1925—Appellate court reverses order of circuit court judge, which compelled Chicago health commissioner to issue license for birth control clinic.

It is agreed at joint meeting that Society should provide advisory council of 5 to cooperate with, counsel and advise executives and board of directors of Illinois Society for Crippled Children in medical matters

Meeting at Quincy was called the diamond jubilee, dating Society from reorganization in 1850. Adams County Medical Society, also observing diamond jubilee, was host. Adams County society gets out convention number of Quincy Medical Bulletin. Society has 6,577 members. Vital point of discussion for immediate future is need for shortening time and expense of preparatory medical training without lessening efficiency. Dues increased to $8.00.

Illinois Federation of Women's clubs plan preschool examinations of children in cooperation with Illinois State Medical Society.

1926—Judge Marcus Kavanaugh asks Chicago Medical Society to name 3 alienists to make mental test of a prisoner sentenced to hang for murder, about whose sanity alienists for defense and prosecution differ. The judge's use of this impartial evidence said to be new.

House of Delegates creates tenth councilor district, dividing large ninth district. Society is pioneer in lay education work. Scientific Service Committee created to work with Education Committee. Council establishes post-graduate service for county societies. Motion carried in favor of section in radiology.

Representatives of Illinois State Medical Society, State Department of Public Health, Illinois Tuberculosis and Public Health Association, Illinois State Association of Graduate Nurses, Illinois Society for Prevention of Blindness, Chicago Heart Association, Illinois Society for Mental Hygiene meet and agree to be temporary organization of a state health council.

1927—Lay Education Committee becomes Education Committee at Moline annual meeting. Membership now 7,247. Society protests fixing by Congress of dosage or prescription of spirituous liquor or restriction of legitimate use of heroin by physicians. Report on teaching clinics inaugurated during administration of Past President Krafft. Woman's Auxiliary to state organization begins with Mrs. Henry G. Mundt as first president. Custom of giving past presidents certificates of service begun.

1928 Warren County Medical Society starts clinics for crippled children.

Society opposes basic science law in effect in some states.

Malcolm La Salle Harris president-elect of A.M.A.

1929—Radiological Society of North America awards John Scott medal and $1,000 to William T. Bovie, Ph.D., for study and development of "electric surgeons knife."

W. D. Chapman goes to Washington, D. C., to combat Newton bill.

Chicago Medical Society contends violation of code of ethics and not economic activities is cause of expulsion of Louis E. Schmidt. His connection with Public Health Institute, and through it with Social Hygiene League, violates code. State organization upholds county society.

Campaign to rescue Chicago's great west side hospital district, one of greatest in world, from squalid surroundings by making it a medical park.

1930—Dr. Fredrickson tells of medical student advisory committee he helped organize to promote and arrange lectures for students and interns on medical organization, economics, legislation, ethics.

House of Delegates chooses Irving S. Cutter permanent historian.

1931—Council meets with American Legion to form contact committee between the two in January, 1931.

Illinois attorney general holds public bospitals cannot exclude doctor licensed by state. Controversy started by Decatur City Hospital for Contagious Diseases which exclude osteopaths and other drugless doctors.

Michael Reese Hospital establishes first serum center in Illinois.

President-elect R. R. Ferguson unable to attend due to serious operation and President Chapman, after conclusion of conference, goes to Dr. Ferguson's home in Chicago to induct him according to decision of House of Delegates. Knox County Medical Society scraps over management of Galesburg Cottage Hospital, splitting in factions, and Illinois State Medical Society revokes charter until matter is settled; investigates and sends mediators. Society lowers dues to $7. Membership 7,543.

Council on Medical Education and Hospitals of A.M.A. approves 53 Illinois hospitals for internships, August 15.

Chicago City Council approves ordinance for supervisor of pound to release unclaimed dogs to medical schools and research laboratories. This is substitute for anti-vivisection ordinance proposed.

1932—Cook County Hospital full while private hospitals only 58 per cent of capacity.

Knox County Medical Society reorganizes January 8 with 42 charter members.

Illinois Board of Medical Examiners resolves that University of Illinois make practicable course in hygiene compulsory for freshman matriculation.

Committee on veterans' service and on medical economics formed at Springfield meeting. Ravenswood Hospital, Chicago, announces its new plan of staff nursing, reducing cost of hospitalization to patents needing more than general floor care. William D. Chapman and William C. Woodward report on their appearance before Senate committee to protest Sheppard-Towner bill. Resolutions: in favor of lien bill, to amend act on ophthalmia neonatorum, opposing building of government hospitals and urging use of available space in local hospitals. New councilor district created to give representation to counties in third district outside Cook County.

School for occupational therapy to be formed to work with Goodwill Industries shops for handicapped and occupation service, and Cook County Hospital.

To give 16,000 physically handicapped children in state proper treatment and help them to be self-sustaining citizens, Society plans far-reaching program of clinics. Each county medical society may conduct such a clinic. Warren County clinic is model for this.

1933—Cook County Superior Court Judge Chas. H. Miller holds corporation may not practice medicine.

Pediatrists discuss advisability of pediatrics section at Peoria meeting. Medical Women's day held. Medical care of poor taken up, various plans in counties.

Governor signs law making use of silver nitrate in eyes of newborn obligatory.

Cook County Graduate School of Medicine completes course in pediatrics.

Murderers of Dr. B. F. Garnitz sentenced to 100 years each in jail. Members of Chicago Medical Society will be granted police protection on request when making calls.

1934—Illinois Emergency Relief Commission works out plan of medical relief with local societies.

Medical Park of Chicago incorporated January 3.

Chas. D. Center, Quincy, president-elect of Society dies March 31 of injuries received when struck by car.

In honor of Chas. D. Center, successor not chosen till Thursday, at Springfield meeting, then Charles S. Skaggs named. About 40 counties cooperate for medical relief of indigents, on plan drawn up by Society and relief commission. Contract practice condemned. Package library as used by Educational Committee said to be unique with this group. Dues reduced to $5. When president ends term of office, he becomes ex-officio member of Council for three years. Special Scientific Exhibition committee appointed: to make awards for good exhibits.

Rockford meeting has motion picture exhibit. Obstetricians receive permission for special meeting next year.

Mississippi Valley Medical Society organizes at Quincy to hold annual meetings for post-graduate instruction.

1936—Group hospitalization tried here and there with Chicago hospital extending it to members of staff and employes.

North Shore Branch of Chicago Medical Society offers reward for conviction of Dr. Silber C. Peacock's murderers.

Social Security Act hailed as menace at Springfield meeting.

New low cost 'plan for hospital care" adopted by Chicago Hospital Council.

1937—Faculty of Rush abolishes fifth year requirement.

Society Cancer Committee organizes war on cancer, aided by Woman's Field Army.

Society cooperates with Department of Health, Illinois Academy of Pediatrics, American Committee on Maternal Welfare, Inc., in bringing post-graduate courses in obstetrics and pediatrics to county medical societies.

Dues raised to $8 at Peoria meeting. Report on organization of American Board of Surgery in answer to need for agency to certify surgeons. Council creates Advisory Committee on Control of Syphilis to cooperate with health department. Secretary Camp says, "Although the seal of the Illinois State Medical Society has shown that the Society was organized in 1850, research investigations on the part of the late L. H. Zeuch, editor of the 'History of Medical Practice in Illinois,' developed the information that the Society was actually formed in 1840, which change will be made on the seal and the stationary following this annual meeting."

Education Committee arranges "refresher courses" in pediatrics and obstetrics due to Social Security Act.

Edwin Rawlins, general counsel of Society advises Medico-Legal Committee be abolished, as it practices law contrary to rule of American Bar Association. Medical Education and Hospitals Committee reports aptitude tests for applicants

to medical schools. Group hospitalization in Chicago, Peoria, Rockford.

Pre-marital examination law effective July 1.

1938—January, 1938 volume is first dating Society from 1840.

Council names committee on Maternal Welfare.

Council plans formation of Fifty Year Club to include every member of Society who has completed 50 years of practice.

Hall of Health proves great success at initial showing at Springfield meeting. Society assumes control of maternal and infant welfare, crippled children's care and control of syphilis rather than let lay groups handle work. Council creates committee on Interprofessional Relations for cooperation between medical and dental professions. Regular sections for pediatrics and obstetrics recommended. Medico-Legal Committee to help and advise members as far as possible but not to hire counsel or give legal defense.

1939—John R. Neal becomes dean of Cook County Graduate School of Medicine.

Hall of Health repeated at Rockford meeting. Society has 7,819 members. Committee on Occupational Therapy and Industrial Hygiene formed at request of A.M.A. for a cooperating group with their committee. Group hospitalization more popular in Chicago since sanctioned by A.M.A. House of Delegates and Councils of Illinois State Medical Society and Chicago Medical Society. Cook County Hospital dropped from list hospitals approved by A.M.A. for intern training, but still approved by Department of Education and Registration of Illinois. John S. Nagel outlines plan for the establishment of a self-perpetuating trust fund for the care of dependent doctors and their families. House of Delegates opposed to graduates of foreign medical schools being allowed to practice in Illinois and will ask Legislature to pass law on this.

July 26, Justice James M. Proctor sustained physicians' demurrers to indictment of officers of the A.M.A. and three medical bodies on antitrust violation charge.

Rush Medical College to become graduate medical school, emphasizing research and providing specialization training.

ILLINOIS STATE MEDICAL SOCIETY

List of Officers and Places of Meeting Since Organization of the Society

Year	President	Secretary	Treasurer	Meeting Place
1840	John Todd	C. F. Hughes		Springfield
1841	John Todd	F. A. McNeill		Springfield
1842	John Todd	F. A. McNeill		Springfield
1843	John Todd	F. A. McNeill		Springfield
1844	John Todd	F. A. McNeill		Springfield
1845	John Todd	F. A. McNeill		Springfield
1846	John Todd	F. A. McNeill		Springfield
1847	John Todd	David Prince		Springfield
1848	John Todd	David Prince		Springfield
1849	John Todd	David Prince		Springfield
1850*	Rudolphus Rouse	Edwin G. Meek		Springfield
1850	Wm. B. Herrick	Edwin G. Meek	Jno. Halderman	Springfield
1851	Samuel Thompson	H. Shoemaker	R. Rouse	Peoria
1852	Rudolphus Rouse	E. S. Cooper	Edw. Dickenson	Jacksonville
1853	Daniel Brainard	H. A. Johnson	A. B. Chambers	Chicago
1854	C. N. Andrews	H. A. Johnson	N. S. Davis	La Salle
1855	N. S. Davis	E. Andrews	J. V. Z. Blaney	Bloomington
1856	H. Noble	N. S. Davis	J. V. Z. Blaney	Vandalia
1857	C. Goodbreak	H. A. Johnson	J. V. Z. Blaney	Chicago
1858	H. A. Johnson	N. S. Davis	J. W. Freer	Rockford
1859	David Prince	N. S. Davis	J. W. Freer	Decatur
1860	Wm. M. Chambers	N. S. Davis	J. W. Freer	Paris
1863†	A. McFarland	N. S. Davis	J. H. Hollister	Jacksonville
1864	A. H. Luce	N. S. Davis	J. H. Hollister	Chicago
1865	J. M. Steele	N. S. Davis	J. H. Hollister	Bloomington
1866	F. F. Haller	N. S. Davis	J. H. Hollister	Decatur
1867	S. W. Noble	N. S. Davis	J. H. Hollister	Springfield
1868	S. T. Throwbridge	N. S. Davis	J. H. Hollister	Quincy
1869	S. T. Throwbridge	T. D. Fitch	J. H. Hollister	Chicago
1870	J. V. Z. Blaney	T. D. Fitch	J. H. Hollister	Dixon
1871	G. W. Albin	T. D. Fitch	J. H. Hollister	Peoria
1872	J. O. Hamilton	T. D. Fitch	J. H. Hollister	Rock Island
1873	D. W. Young	T. D. Fitch	J. H. Hollister	Bloomington
1874	T. F. Worrell	T. D. Fitch	J. H. Hollister	Chicago
1875	J. H. Hollister	T. D. Fitch	Wm. E. Quine	Jacksonville
1876	T. D. Washburn	N. S. Davis	J. H. Hollister	Urbana

*Rudolphus Rouse and Edwin G. Meek acted as president and secretary respectively until the Constitution was adopted and new officers elected, Herrick succeeding Rouse as president.

†No meetings were held in 1861-62, due to the Civil War.

OFFICERS CONTINUED

1877	T. D. Fitch	N. S. Davis	J. H. Hollister	Chicago
1878	J. L. White	N. S. Davis	J. H. Hollister	Springfield
1879	E. P. Cook	N. S. Davis	J. H. Hollister	Lincoln
1880	Ephraim Ingals	N. S. Davis	J. H. Hollister	Belleville
1881	G. W. Jones	S. J. Jones	J. H. Hollister	Chicago
1882	Robert Boal	S. J. Jones	J. H. Hollister	Quincy
1883	A. T. Darrah	S. J. Jones	J. H. Hollister	Peoria
1884	E. Andrews	S. J. Jones	Walter Hay	Chicago
1885	D. S. Booth	S. J. Jones	Walter Hay	Springfield
1886	Wm. A. Byrd	S. J. Jones	Walter Hay	Bloomington
1887	Wm. T. Kirk	D. W. Graham	Walter Hay	Chicago
1888	Wm. O. Ensign	D. W. Graham	Walter Hay	Rock Island
1889	C. W. Earle	D. W. Graham	T. W. McIlvaine	Jacksonville
1890	John Wright	D. W. Graham	T. W. McIlvaine	Chicago
1891	Jno. P. Mathews	D. W. Graham	Geo. N. Kreider	Springfield
1892	Charles C. Hunt	D. W. Graham	Geo. N. Kreider	Vandalia
1893	E. Fletcher Ingals	D. W. Graham	Geo. N. Kreider	Chicago
1894	Otho B. Will	J. B. Hamilton	Geo. N. Kreider	Decatur
1895	Daniel R. Brower	J. B. Hamilton	Geo. N. Kreider	Springfield
1896	D. W. Graham	J. B. Hamilton	Geo. N. Kreider	Ottawa
1897	A. C. Corr	J. B. Hamilton	Geo. N. Kreider	East St. Louis
1898	J. N. G. Carter	E. W. Weis	Geo. N. Kreider	Galesburg
1899	J. T. Pitner	E. W. Weis	Geo. N. Kreider	Cairo
1900	H. N. Moyer	E. W. Weis	Geo. N. Kreider	Springfield
1901	G. N. Kreider	E. W. Weis	E. J. Brown	Peoria
1902	J. T. McAnally	E. W. Weis	E. J. Brown	Quincy
1903	M. L. Harris	E. W. Weis	E. J. Brown	Chicago
1904	C. E. Black	E. W. Weis	E. J. Brown	Bloomington
1905	W. E. Quine	E. W. Weis	E. J. Brown	Rock Island
1906	H. C. Mitchell	E. W. Weis	E. J. Brown	Springfield
1907	J. F. Percy	E. W. Weis	E. J. Brown	Rockford
1908	W. L. Baum	E. W. Weis	E. J. Brown	Peoria
1909	J. W. Pettit	E. W. Weis	E. J. Brown	Quincy
1910	J. L. Wiggins	E. W. Weis	E. J. Brown	Danville
1911	A. C. Cotton	E. W. Weis	E. J. Brown	Aurora
1912	W. K. Newcomb	E. W. Weis	E. J. Brown	Springfield
1913	L. H. A. Nickerson	E. W. Weis	A. J. Markley	Peoria
1914	Charles J. Whalen	W. H. Gilmore	A. J. Markley	Decatur
1915	A. L. Brittin	W. H. Gilmore	A. J. Markley	Springfield
1916	C. W. Lillie	W. H. Gilmore	A. J. Markley	Champaign
1917	W. L. Noble	W. H. Gilmore	A. J. Markley	Bloomington
1918	E. B. Coolley	W. H. Gilmore	A. J. Markley	Springfield
1919	E. W. Fiegenbaum	W. H. Gilmore	A. J. Markley	Peoria
1920	J. W. Van Derslice	W. H. Gilmore	A. J. Markley	Rockford
1921	W. F. Grinstead	W. H. Gilmore	A. J. Markley	Springfield
1922	Charles Humiston	W. H. Gilmore	A. J. Markley	Chicago
1923	E. P. Sloan	W. D. Chapman	A. J. Markley	Decatur
1924	E. H. Ochsner	W. D. Chapman	A. J. Markley	Springfield
1925	L. C. Taylor	H. M. Camp	A. J. Markley	Quincy
1926	J. C. Krafft	H. M. Camp	A. J. Markley	Champaign
1927	Mather Pfeiffenberger	H. M. Camp	A. J. Markley	Moline
1928	G. Henry Mundt	H. M. Camp	A. J. Markley	Chicago
1929	J. E. Tuite	H. M. Camp	A. J. Markley	Peoria
1930	F. O. Frederickson	H. M. Camp	A. J. Markley	Joliet
1931	Wm. D. Chapman	H. M. Camp	A. J. Markley	East St. Louis
1932	R. R. Ferguson	H. M. Camp	A. J. Markley	Springfield
1933	John R. Neal	H. M. Camp	A. J. Markley	Peoria
1934	Philip H. Kreuscher	H. M. Camp	A. J. Markley	Springfield
1935‡	Chas. D. Center (Past President-Elect)			
1935	Chas. S. Skaggs	H. M. Camp	A. J. Markley	Rockford
1936	Chas. B. Reed	H. M. Camp	A. J. Markley	Springfield
1937	Rolland L. Green	H. M. Camp	A. J. Markley	Peoria
1938	R. K. Packard	H. M. Camp	A. J. Markley	Springfield
1939	S. E. Munson	H. M. Camp	A. J. Markley	Rockford
1940	James H. Hutton	H. M. Camp	A. J. Markley	Peoria

‡Died before induction into office.

VICARIOUS PATERNITY

A gentleman was much surprised when the good-looking young lady greeted him by saying "Good evening." He could not remember ever having met her before.

She evidently realized her mistake, for she apologized and explained, "Oh! I'm so sorry! When I first saw you I thought you were the father of two of my children."

She walked on, while the man stared after her. He did not know, of course, that she was a school teacher. —*Let's Go.*

PRESIDENTS
ILLINOIS STATE MEDICAL SOCIETY
1840-1940



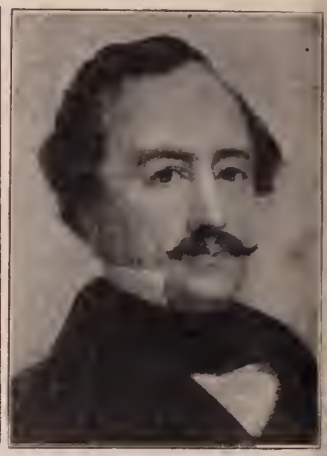
J. F. Todd, M. D., 1840



W. B. Herrick, M. D., 1850



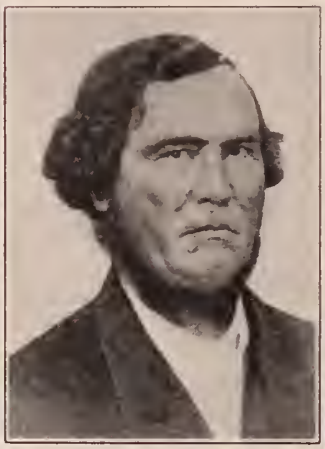
Rudolph Rouse, M. D., 1852



Daniel Brainard, M. D., 1853



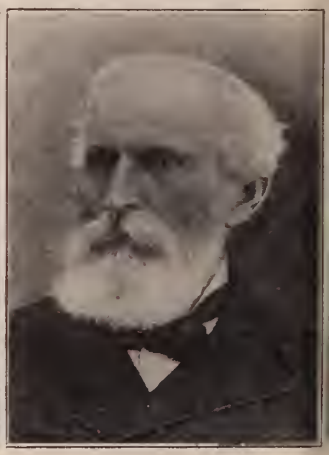
N. S. Davis, M. D., 1855



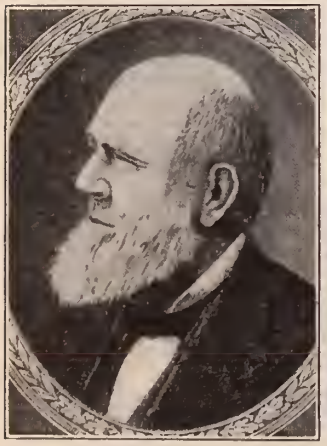
Harrison Noble, M. D., 1856



C. Goodbrake, M. D., 1857



H. A. Johnson, M. D., 1858



David Prince, M.D., 1859



W. M. Chambers, M. D., 1860



A. McFarland, M. D., 1863

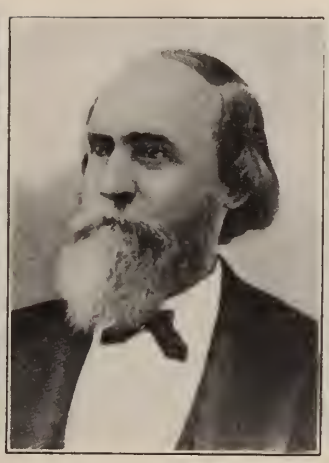


F. F. Haller, M. D., 1866

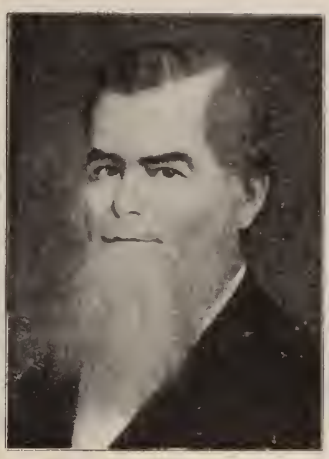
PRESIDENTS



S. T. Trowbridge, M. D., 1868-69



James V. Z. Blaney, M. D., 1870



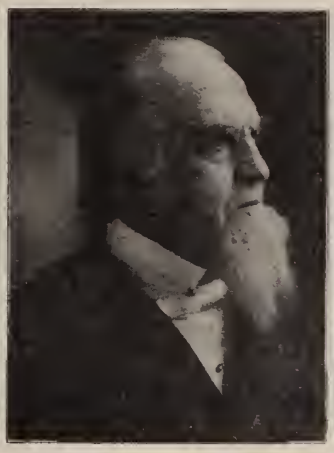
J. O. Hamilton, M. D., 1872



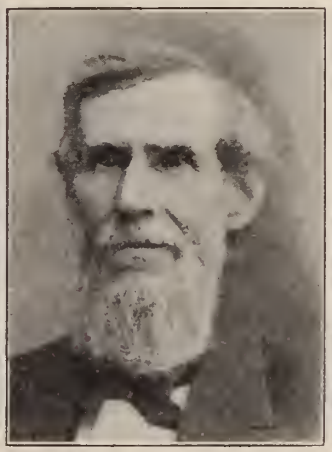
D. W. Young, M. D., 1873



T. F. Worrell, M. D., 1874



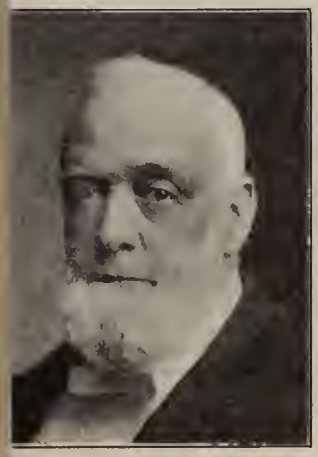
J. H. Hollister, M. D., 1875



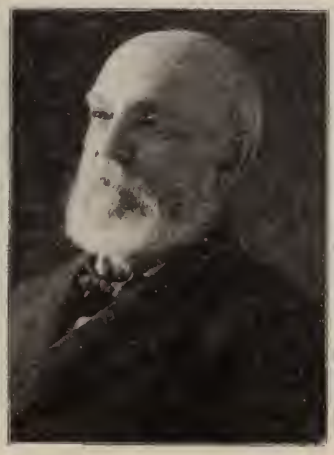
T. D. Washburn, M. D., 1876



T. D. Fitch, M. D., 1877



J. L. White, M. D., 1878



E. P. Cook, M. D., 1879



E. Ingals, M. D., 1880



G. W. Jones, M. D., 1881

PRESIDENTS



Robert Boal, M. D., 1882



A. T. Darrah, M. D., 1883



Edmund Andrews, M. D., 1884



D. S. Booth, M. D., 1885



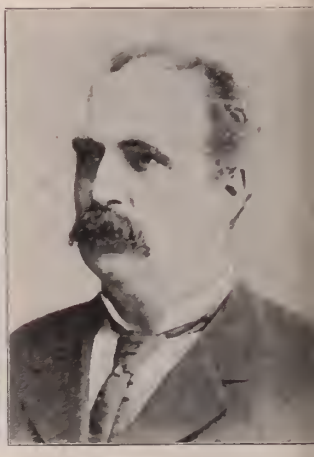
W. A. Byrd, M. D., 1886



William T. Kirk, M. D., 1887



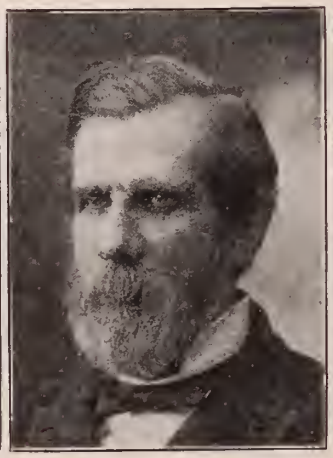
William O. Ensign, M. D., 1888



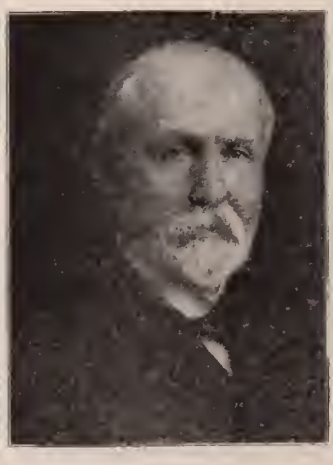
C. W. Earle, M. D., 1889



John Wright, M. D., 1890



J. P. Matthews, M. D., 1891

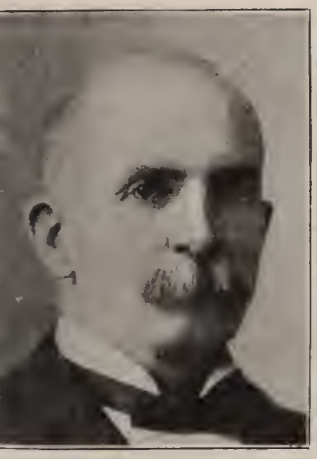


Charles C. Hunt, M. D., 1892

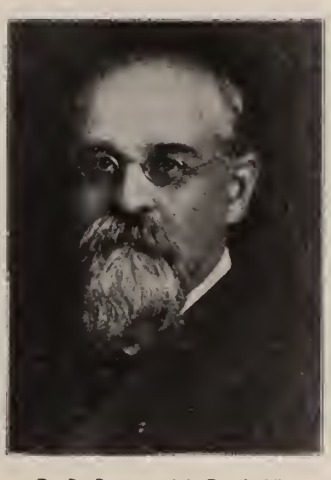


E. F. Ingals, M. D., 1893

PRESIDENTS



O. B. Will, M. D., 1894



D. R. Brower, M. D., 1895



D. W. Graham, M. D., 1896



Albert C. Corr, M. D., 1897



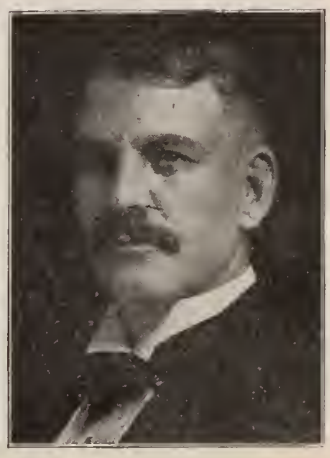
J. M. G. Carter, M. D., 1898



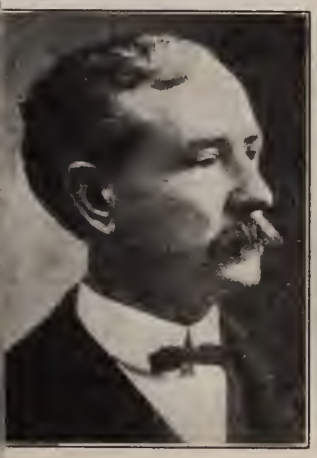
J. T. Pitner, M. D., 1899



Harold N. Moyer, M. D., 1900



G. N. Kreider, M. D., 1901



J. T. McAnally, M. D., 1902



M. L. Harris, M. D., 1903

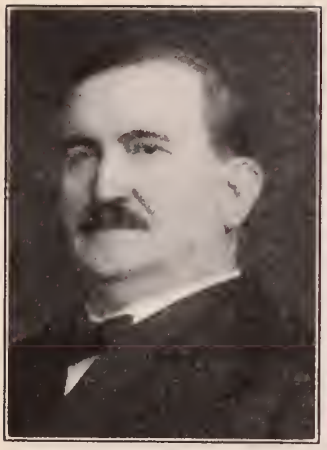


Carl E. Black, M. D., 1904



W. E. Quine, M. D., 1905

PRESIDENTS



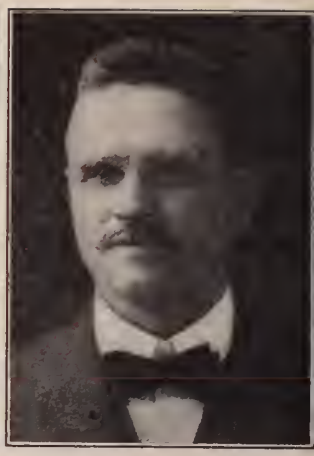
H. C. Mitchell, M. D., 1906



J. F. Percy, M. D., 1907



J. W. Pettit, M. D., 1909



J. L. Wiggins, M. D., 1910



W. K. Newcomb, M. D., 1912



L. H. A. Nickerson, M. D., 1913



Charles J. Whalen, M. D., 1914



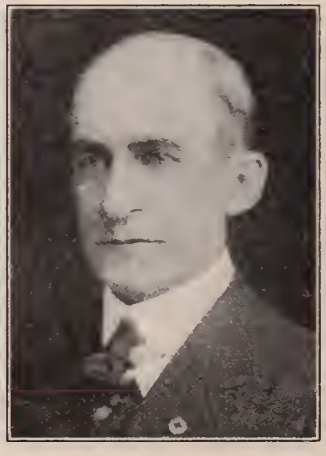
A. L. Brittin, M. D., 1915



Charles W. Lillie, M. D., 1916



William L. Noble, M. D., 1917



E. B. Coolley, M. D., 1918



E. W. Fiegenbaum, M. D., 1919

PRESIDENTS



J. W. Van Derslice, M.D., 1920



W. F. Grinstead, M. D., 1921



Charles E. Humiston, M. D., 1922



Edwin P. Sloan, M. D., 1923



Edward H. Ochsner, M. D., 1924



Lewis C. Taylor, M. D., 1925



J. C. Krafft, M. D., 1926



Mather Pfeiffenberger, M. D., 1927



G. Henry Mundt, M. D., 1928



John E. Tuite, M. D., 1929



Frederick O. Fredrickson, M. D., 1930

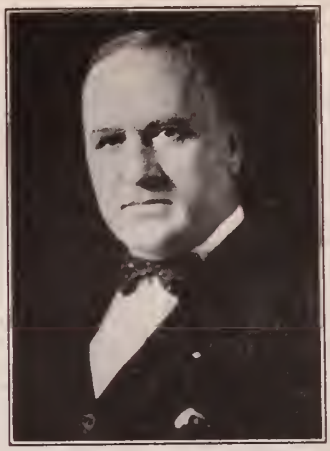


William D. Chapman, M. D., 1931

PRESIDENTS



R. Ralph Ferguson, M. D., 1932



John R. Neal, M. D., 1933



Philip H. Kreuscher, M. D., 1934



Charles S. Skaggs, M. D., 1935



Charles B. Reed, M. D., 1936



Rolland Lester Green, M. D., 1937



Rollo K. Packard, M. D., 1938



Samuel E. Munson, M. D., 1939



James H. Hutton, M. D., 1940

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We were unable to obtain pictures of the following presidents: Samuel Thompson, M. D., 1851; C. N. Andrews, M. D., 1854; A. H. Luce, M. D., 1864; J. M. Steele, M. D., 1865; S. W. Noble, M. D., 1867; G. W. Albin, M. D., 1871; W. L. Baum, M. D., 1908; A. C. Cotton, M. D., 1911.

Original Articles

THE LEGISLATIVE ACTIVITIES OF THE SOCIETY IS A PUBLIC SERVICE

J. R. Neal, M. D.
CHICAGO

Two basic principles have governed the legislative policies and activities of the medical profession in Illinois, ever since the Territorial days when interest in this field was first expressed in the form of laws. These two principles are:

1. *The protection and improvement of the public health through organized official effort based upon sound scientific knowledge and good economic practice;* and

2. *The protection and improvement of both individual and public health through the maintenance and elevation of the standards of medical practice based upon the qualifications of practitioners of the healing art. While the results of efforts along these lines redound advantageously to qualified physicians, both principles operate primarily and fundamentally in the public interests. They cause an expansion of public health service, encourage medical research and improved medical education and tend to discourage inferior and unethical forms of practice.*

Upon the initiative of the medical profession, laws creating an official public health agency for regulating the qualifications of physicians, for collecting reports on births, deaths and disease, and for promoting sanitation were enacted in 1817, 1819 and 1825. Unfortunately, these were all repealed. Committees from the organized medical profession unsuccessfully petitioned the General Assembly in 1856 and 1861 to enact similar laws. In 1877, as a direct result of work done by a committee of the Illinois State Medical Society appointed for that purpose, a State Board of Health was created and a Medical Practice Act regulating the qualifications of physicians was enacted. These laws were permanent in character.

Since that time the Illinois State Medical Society has participated actively in legislative matters relating to public and individual health, and has been largely responsible for raising the standards of medical practice which protects the public against gross exploitation by charlatans and ignorant cults. The Society has been influential also in the expansion of public health service on a sound scientific and economic basis.

Rapid development of scientific knowledge during the last quarter of a century; the ever alertness of shrewd minds to exploit half-truths in the medical field to commercial advantage and the changes in social philosophy have compelled the Illinois State Medical Society, in the interests of good medicine and sound economy, to maintain a Legislative Committee upon what is practically a "lobby" basis. The work of this committee has been guided steadfastly by the two basic principles which have traditionally guided the legislative attitude and activities of the medical profession in the State and which are stated above.

Activity of the Legislative Committee during the regular session of the General Assembly in 1939 illustrates very well the general character of its work during the last 25 years. Some 52 proposals relating to the practice of medicine or public health were offered in the form of bills. All were carefully studied, those without merit in the public interest being vigorously opposed and those of potential benefit being endorsed by the Legislative Committee.

Among the more important bills successfully opposed were two classes:

1. Those aimed at lowering the standards of medical practice by the unlimited licensure of unqualified practitioners; and

2. Those which would set up impractical, unscientific and uneconomical official activities in the name of public health service.

Of the first class, two bills would have given to osteopaths—with their insufficient professional education—all of the privileges of regularly qualified physicians and surgeons. Another bill would have encouraged greatly the expansion of the chiropractice system into a field of treatment for which its students are not properly schooled; another would give privileges to the system of naprapathy (despite the fact there is no recognized college teaching naprapathy in the United States), and a third, all forms of drugless healing. *Favorable legislation, in fact, would give broader powers to these drugless systems. Such a step would appear to be definitely retrogressive at a time when strong efforts are afoot to provide better and more extensive medical care to more of the people.*

Of the second class—the impractical proposals offered in the name of public health service—one bill would have required the medical examination of all food handlers at 90-day intervals, a measure that would entail enormous expense on the one hand and that has proved in actual practice to be of no significant advantage in the control of communicable diseases.

Another bill would have legalized the practice of medicine by corporations, a measure which would have commercialized medicine.

Among bills endorsed by the Legislative Committee, and which became law, were measures that require:

1. prenuptial physical examinations for venereal diseases!
2. blood tests of pregnant women for syphilis;
3. the supervision of maternity hospitals by the State Department of Public Health;
4. the expansion of services in the control of pneumonia, syphilis and tuberculosis; and
5. the sanitary control of pasteurized and Grade A milk by the State Department of Public Health.

At previous sessions of the General Assembly the anti-vivisectionists have offered bills time and time again which would have prohibited the use of animals for medical experimental purposes. At every previous session for at least a quarter of a century vigorous efforts have been made toward the passage of laws designed to encourage and expand the practice of cults and quacks and to lower the standards of medical qualifications. Numerous bills offering all manner of schemes that at least legalized the opportunity to exploit the public through commercializing medical and scientific knowledge and bills proposing programs of good public health purpose—but economically and practically unsound—have come before the General Assembly from time to time. The Legislative Committee has fought such measures industriously, not on the legislative floor alone, but by making public the implications and potentialities of each measure.

On the other hand, the Legislative Committee has initiated several legislative proposals for raising the standard of medical practice and has endorsed acceptable proposals put forward by the public health authorities of the State.

Largely because public support is essential to the trend of legislation in medical and public health matters, no less than in other fields, the State Medical Society created a Committee on Health Education. Financed by the Society, this Committee, established at the suggestion of the Legislative Committee, maintains a speakers' bureau; distributes literature; provides exhibits; conducts radio broadcasting programs and uses other efficacious channels for educating the publice in health and medical matters.

This brief review of the character of the work done by the Legislative Committee of the Illinois State Medical Society is offered as evidence that its activities are and always have been, fundamentally, in public interest and for public benefit. While there is an economic side to medicine—since physicians like other human beings must live—the medical profession is primarily a humanitarian calling whose services are devoted to public welfare. It follows, therefore, that laws which operate to protect high standards of medical practice and to encourage improvement in medical and public health practice, operate also in general public interest.

Toward that end the Legislative Committee of the Illinois State Medical Society has steadfastly striven, and will continue to strive.

Sovereign Hotel.

MEDICAL EDUCATION IN ILLINOIS DURING THE LAST ONE HUNDRED YEARS

Fred C. Zapffe, M.D.*

CHICAGO

From 1840 to 1940 is a far cry, especially as it concerns medical education. So much has happened by way of progress that it is impossible to review the situation adequately in a short article. Medical education has been a favorite football for unthinking critics, both lay and professional. Medical educators have been condemned for sins of omission and commission but the fact remains that they must be given credit for the many significant advances that have been made in the field of medical education and without being driven to do it.

Medical educators live with medical education. It is their immediate concern. They know, not only what has happened in the past, but what are the needs of the present, and are well aware of the needs of the future. Their sole objective is to give preparation which will enable the fu-

*Secretary, Association of American Medical Colleges, Chicago, Illinois.

ture physician to practice his profession wisely and well, in the best interests of the people who may come under his care. Their interests lie not only in the medical school itself, but also in the colleges, the universities and the hospitals, each of which contributes largely to the future success of the physician, who must be an educated gentleman and must know medicine as it should be practiced. Therefore, their interests are spread over a large field in parts of which they cannot exercise jurisdiction without full and complete cooperation.

The rapid and far reaching advances made in medical knowledge are a challenge to keep pace. To meet these advances adequately, frequent changes in plans and procedures must be made almost from day to day. Medical pedagogy began as the result of an intense desire to teach and to prepare men and women for the practice of medicine. Perhaps this desire may, at one time, have been motivated in part by a selfish interest to further personal practice, but it cannot be said in truth that such a motivation exists among medical instructors today. Medical instructors have developed, and, I believe, more rapidly than have instructors in any other field of knowledge. We never have had a college or school of education for medical instructors. Experience has been the only stimulus and guide in the development of medical instructors. It cannot be gainsaid that the result has not been a good one.

One hundred years ago there was only one medical school chartered in Illinois—Rush Medical College, which was organized in 1837. Since that time, forty-three medical colleges have been organized, some good, some bad. Of that number, five survive today: Rush Medical College, now an integral part of the University of Chicago; the College of Medicine of the University of Illinois; Northwestern University Medical School; Loyola University School of Medicine and the Chicago Medical School. Rush will cease to exist as an undergraduate school of medicine in 1942 when it will become the postgraduate school of medicine of the University of Chicago.

Historically it is interesting to follow the rise and fall of all the medical schools which, many of them, have long since been forgotten. Some combined and affiliated until there remain the five schools now in existence. Space forbids even a cursory review of these developments. We must content ourselves with the conviction that out of chaos has come order like unto a Phoenix arising from the ashes. Doubtless, every change is significant of progress and order. Aside from those schools which were founded by individuals for mercenary motives alone and which, in many instances, were declared by the authorities of the State to be fraudulent, there were schools which were founded for motives which cannot be criticized. Out of a combination of such schools came schools which remain today and which are a credit to medical education and to medical educators.

At one time profits accrued to the owners of a medical school. Dividends were distributed at the end of each college year. Today, medical education has become so costly that it taxes the universities, private philanthropy and the states to maintain medical colleges. Billions of dollars are invested in buildings and equipment. Maintenance has become a tax on available resources. And what is the purpose and objective for which these huge sums of money are being spent? To provide the people with the best medical care obtainable.

At the beginning of the one hundred years under discussion, any one who had the desire, the time and the small amount of money required could study medicine. Usually he came with some preparation, having worked for a practitioner of medicine who was styled a "preceptor." Often such service consisted only of taking care of the doctor's horse and buggy and his office. Sometimes the student was permitted to accompany the master on his rounds and to assist in a small way in his office practice. Doubtless he got some worthwhile experience from this service. Many eminent physicians came through this procedure—although not all who did became eminent. However, there was merit in the plan. Unfortunately it has passed completely into oblivion.

At that time the "course" in college consisted of lectures for five months. Then it was lengthened to six months, and later to a second year of six months, which was a repetition of the first six months—a sort of "hammering" home the lesson instructors were trying to teach. In passing it should be said that many of these instructors were very able physicians and excellent teachers. Their work served as an example for

the development of teaching and they can be truly said to have been the prototype of the teachers of today.

The next development was setting up certain requirements—perhaps, somewhat nebulous and not always exacted—for admission to medical school: educational requirements. At first these went little beyond a common school education, an ability to "read, write and figure." Later a little Latin was required, and to meet this requirement, some medical schools gave a course in Latin, socalled medical Latin which was intended to enable the student to write a prescription in good Latin.

Toward the end of the nineteenth century the course in medical college was lengthened to three years of six months each, with a more or less graded curriculum. The subjects taught were beginning to receive a definite place. Combined subjects, formerly taught by one man, such as anatomy and surgery, materia medica and practice, were parted and each given its own time in the curriculum. The increment to medical knowledge was making itself felt. Research, then known as experimentation, was entering the picture by contributing definite knowledge in many fields of medicine. Special subjects were coming into view and men were preparing themselves to practice and to teach these subjects. The whole scheme of medical education was getting more and more complicated and calling for more and more changes in teaching, in courses, in administration.

Finally there emerged the three years' course of eight months and then the four years' course of eight months—which exists today—with another change in the immediate offing, a lengthening of the college year to ten or even eleven months.

The modus operandi of teaching has also undergone a great change. Starting with the system of lectures only, clinical instruction was introduced both through an outpatient department —formerly termed dispensary—and through the surgical clinics, first held, usually, in the college amphitheater, later in a hospital. As knowledge in the fundamental subjects increased, special subjects were allotted less and less time. Formerly these subjects helped to fill the hours of the day and keep the student busy in college from 8 o'clock in the morning until 6 o'clock in the evening with dissections at night. Today the trend is to take up as little of the student's time as possible with didactic work—lectures—and give him more opportunity to read, study, think and reason. The "spoon feeding" system has given away to self-education or "Lehrnfreiheit."

The preparation for the study of medicine is now receiving more of the attention of medical educators than ever before. A definite preparation is insisted on, one which will be helpful to the future student of medicine. From a common school education it went to one, two, three and finally four years of high school. Then one year of college work was added and today the minimum requirement for admission to medical schools is two years of college with certain subject prescriptions. True, most students go far beyond this minimum in order to be better prepared. A few medical colleges require a bachelor's degree with special prescriptions. The aim of all medical colleges is to secure students who are scholastically well prepared, who can master the difficulties of the medical curriculum, and who, it is hoped, will make good practitioners of medicine.

Illinois has done its part in bringing about improvement in medical education and in medical schools. Although once charged as being "the plague spot in medical education" in the United States, it must now be given a prominent place in the sun as having gone as far as any State in advancing medical education. That this statement is true is confirmed by the fact that in 1939, 3,226 individuals made application for admission to Illinois medical colleges. Of that number, 657 were accepted but only 512 enrolled. For one reason or another not all accepted applicants enter medical school. Three years of college work is the minimum for admission to these schools. Doubtless, did physical facilities permit, the enrollment would be much larger than it is. Enrolled students come from every state in the Union, not only from Illinois for the reputation of Illinois medical schools is far flung and well recognized. In facilities, equipment and personnel they stand high among medical colleges. Illinois no longer is "the plague spot in medical education."

The charge has often been made that it is difficult to enter medical college; that admission is granted to the favored and denied to the lowly. That certainly is not true. Every year about 52 per cent. of applicants are admitted and since

admission is based, in large part, on scholarship, it must be apparent that discrimination, for any reason, does not enter in the selection of medical students. In state university owned medical colleges preference is given, as it should be, to residents of the state. But even in these institutions, selection from among residents is based on scholarship. The doors are not thrown open to a resident because he is a resident. He must be able to qualify scholastically and if he does, he is given preference over an equally qualified nonresident. Inasmuch as all state owned medical schools give placement to residents of other states, there is every reason why Illinois should also extend this courtesy. And, it is generally regarded as wholesome to have a little "leaven" in the loaf. It is stimulating to the student body as a whole. Also nonresidents are charged a larger fee than residents, of which the public, as a rule, is not aware. We often hear it said, "Why should we pay for the education of a resident of another state?" We must remember that some other state is doing as much for us. Then, too, not all the resident graduates of our state school enter practice in this state. Some go elsewhere. Therefore, what has been spent in educating these men and women for the practice of medicine is a total loss to us. On the other hand, physicians educated by other states come to Illinois to practice, which balances things very well.

It has been said that too much money is being spent by medical schools. That is not true if one keeps in mind what good is done by such expenditure. Medicine and medical practice are fluent. Advances must be made. It costs money to make them and only those who are well qualified should be supported in their efforts to make these advances, usually spoken of as research. Research is costly, but if it were not made, medicine would be static and the people would not receive the great benefit from medical practice, through prevention and cure, which they should receive. Prevention of disease, as well as cure, has prolonged human life by at least twenty years. Every economist will say that the cost has been justified. Much still remains to be done, and many earnest, ardent men and women are giving their time, their life, to uncover the unknown and make it known to finding new or better means for effecting a cure, to learning how to free mankind from many diseases and how to prolong life.

Illinois has not been a laggard in this work. One need only review medical literature for the past twenty-five years to see how much has been contributed to medical science and the improvement of medical practice by members of the faculties of our medical schools. Their names and their work are known throughout the world. Their findings are accepted as authoritative. They deserve our wholehearted support—spiritual and financial. No money has been wasted.

The agriculturalist cheerfully underwrites any expenditure which will enable him to raise more and better crops, with less labor, perhaps. Why not underwrite the men who are working for better health, less sickness, longer life? After all, what greater boon than a healthy life? Cure is important to the patient, but prevention is far more important. Both cure and prevention, the discovery of still unknown causes of diseases are the objects of study by many investigators whose sole aim is to relieve mankind from illness. Economically this is sound. The medical colleges of Illinois are doing their share to increase the sum of human happines and they are meeting with success. Therefore, they are deserving of support in word and deed. It is not impossible that the greatest contribution to medical science and human welfare may be made by an Illinois medical college before the passage of another hundred years.

HOSPITAL DEVELOPMENT IN ILLINOIS

Homer F. Sanger

Council on Medical Education and Hospitals of the American Medical Association

CHICAGO

When one goes into the history of the hospitals of Illinois and gets together a lot of interesting material for an article, he must necessarily decide what to omit and what to include. He finds that it is utterly impossible to tell about all the important facts and interesting episodes in hospitals individually unless he is going to write a book. When the space is limited, one cannot more than tell about the beginnings of hospitals —the forces that brought them into existence— their rate of expansion at different periods, and the present status of hospital facilities in the state.

The reader of such a sketch hopes to learn, first of all, which was the first hospital in the

state. That information usually cannot be obtained. The first hospital and, indeed, many of its successors, doubtless passed away before the establishment of an institution which became permanent. Wherever there was any considerable settlement or center of population there would be some sick and injured and provision to care for them, which would approximate hospital service. Hospitals doubtless grow out of the basic human desire to live and to be well.

The different organized groups that have established them have been motivated by certain interests, such as religious, political, social, civic and, possibly, commercial. Hospitals have been about as stable as the organizations that promoted them. They have been as good as the people, and especially the physicians, that have been connected with them. They have been about as permanent and as prosperous as the centers of population in which they have been established.

A rapidly growing state in which the population is increasing throughout its area, as was generally the case in Illinois, will have many hospitals, mainly small ones at first, widely distributed and of greatly diversified types. They will be pared down by the survival of the fittest and by the merging of two or more smaller into one larger institution. Commercial considerations will give way to economic and social considerations.

TABLE 1

When Existing Hospitals in Illinois Were Established and Their Present Ownership or Control

No. of Hospitals Established in Each Decade		Church Related	Nonprofit Association	Individual and Partnership	County	City	State	Corporation for Profit	Federal	Fraternal
1840-49	2	1	..	..	..	..	1	..	..	..
1850-59	2	..	1	..	..	..	1	..	..	..
1860-69	15	5	4	..	1	..	4	1	..	..
1870-79	16	9	1	..	..	1	4	..	1	..
1880-89	20	12	8	..	..	..	..	..	..	..
1890-99	42	13	13	1	..	4	4	4	2	1
1900-09	49	20	15	6	..	3	1	4	..	..
1910-19	62	11	20	9	8	7	2	2	2	1
1920-29	69	12	16	14	13	3	2	4	3	2
1930-39	24	5	8	4	1	3	1	2	..	..
Totals	301	88	86	34	23	21	20	17	8	4

Sometimes a hospital would be reorganized, renamed, in the same building, and sometimes moved to another town. It is not always easy to trace the line of succession—to say when it is the same institution that was established, say, forty years ago. Most hospitals actually are built out of material, staff, personnel, from one or several pre-existing institutions.

The information for this study is based mainly on the reports furnished by hospitals which are now on file in the office of the American Medical Association and other data which the Association has accumulated, particularly in the past thirty-two years.

The 301 registered hospitals at present existing on Illinois soil have been arranged in the order of their establishment (Table 1) by decades from 1840 down to the present time. The table also shows the control, ownership or auspices under which they are conducted.

The two hospitals that date their establishment in the forties are the Jacksonville State Hospital, Jackonville, 1847, and Mercy Hospital Chicago, 1849; and the two in the fifties are the Chicago Memorial Hospital, Chicago, and the Illinois State Eye and Ear Infirmary, Chicago.

It appears that the hospital enterprise, at least the production of permanent institutions, got a strong start by establishing fifteen hospitals in the sixties. These were followed by sixteen in the seventies, twenty in the eighties, forty-two in the nineties, forty-nine in the ninteen hundreds, sixty-two in the teens. And the machinery really went into high gear in the nineteen twenties with the establishment of sixty-nine institutions which are still existing. The thirties produced twenty-four.

TABLE 2

Growth of Hospital Facilities in Illinois 1909 to 1940
According to Ownership or Control

	Hospitals			Beds		
	1909	1927	1940	1909	1927	1940
Federal	3	10	8	555	3,246	5,767
State	13	24	20	11,505	24,363	42,605
County	10	27	23	5,507	5,162	6,192
City	15	25	21	689	2,478	3,167
Church related	70	95	88	6,447	10,334	11,876
Fraternal	1	8	4	60	371	339
Nonprofit associations	72	..	86	4,285	....	8,986
Independent associations	..	115	..	....	9,982	....
Individual and partnership	38	63	34	929	1,452	817
Corporations for profit	6	..	17	312	....	1,356
Totals	228	367	301	30,289	57,388	81,105

As to the groups responsible for these institutions, credit is assigned to churches for eighty-eight, and to other nonprofit associations for eighty-six hospitals. The columns which give these figures indicate that the church claims one hospital in the forties, five in the sixties, nine in the seventies, and in the succeeding five decades

twelve, thirteen, twenty, eleven and twelve, respectively, dropping to five in the decade from 1930 to 1939, inclusive.

Other nonprofit associations started a decade later and increased in a similar crescendo, the crest of the wave being constantly about ten years behind that of the churches. The oldest existing individually owned hospital was established in the nineties, six belonged to the nineteen hundreds, nine to the teens and fourteen to the twenties. Four existing individually owned institutions were established in the thirties, making thirty-four in all.

Among the twenty-three county hospitals in the state is Cook County Hospital, established in 1865. Thirteen, or more than half, were established in the twenties. Eight others in the teens and one in the thirties. Seventeen county hospitals are for tuberculoisis.

City hospitals, twenty-one in number, claim one for the seventies and a small number in each of the latest five decades.

The state government has to its credit a hospital built in 1847, apparently the oldest existing hospital in the state, and it has added one or more institutions each decade except in the eighties.

Of the hospitals incorporated for profit, or at least with profit permitted, there remains one that was established in the sixties, the others being distributed through the nineties and succeeding decades down to the present, when there are seventeen in all.

The federal column shows eight hospitals, and the fraternal four.

TABLE 3

Growth of Hospital Facilities in Illinois 1909 to 1940
Acording to Type of Service

	Hospitals			Beds		
	1909	1927	1940	1909	1927	1940
General	161	234	206	12,054	24,080	27,624
Nervous and mental	22	27	29	15,238	24,877	45,180
Tuberculosis	8	25	27	648	3,195	3,782
All other hospitals	37	81	39	2,349	5,236	4,519
Totals	228	367	301	30,289	57,388	81,105

By 1909 hospital facilities of a permanent character and of excellent to fair quality had been established in eighty-seven cities and towns. The number of such localities had increased to 157 by 1927, and receded to 137 by 1940.

As indicative of trends in the development of hospitals, the average capacity of all the hospitals of the state was 133 in 1909, 156 in 1927 and 270 in 1940. In 1909 the general hospitals averaged 75 beds; in 1927, 103 beds and in 1940, 134 beds.

The total capacity of all hospitals in the state in 1909 was 30,289 beds; in 1927 it was 57,388, and in 1940 it is 81,105 beds and 4,192 bassinets.

Even persons who have been in the midst of hospital development in Illinois will view with wonder the actual growth as shown by figures in tables 2 and 3. The combined facilities practically trebled and, as to actual value, much more than trebled in that space of time; in fact, the hospitals for mental diseases exactly trebled, having grown from a capacity of 15,238 in 1909 to 45,180 in 1940. The general hospitals increased from 12,054 beds in 1909 to 27,624 beds in 1940, and tuberculosis facilities from a capacity of 648 beds in 1909 to 3,782 beds in 1940.

PRESENT STATUS OF HOSPITAL FACILITIES IN ILLINOIS

The 301 registered hospitals of Illinois have a total capacity of 81,105 beds, 4,192 bassinets, and an average census of 66,667 patients. In 1939 there were 78,674 births in these hospitals.

In the year 1939, the total patients admitted to the Illinois hospitals was 681,397. To the seventy-two governmental hospitals went 167,130 patients, and to the 229 nongovernmental hospitals went 514,267 patients.

Of all the persons who went to the hospitals of Illinois in 1939, the general hospitals admitted 91.7 per cent. About the same percentage of admissions went to the general hospitals throughout the country.

In 1931 the general hospitals in Illinois received 88.8 per cent of the patients, while in that year the general hospitals of the whole nation received 88.3 per cent of the patients admitted.

The foregoing figures refer to bed patients and not to outpatients. There is a variety of outpatient service in Illinois, as elsewhere, extending from the regular, organized, departmentalized outpatient departments through the various types of ambulatory service, and including the rather common custom of some physicians who meet their ambulatory patients in the hospital. Sixteen large general hospitals in the cities of the state have well organized, departmentalized outpatient departments, and an equal

number have organized general outpatient services, not departmentalized.

SCHOOLS OF NURSING

With regard to the training of nurses, the hospitals of Illinois seem to have rendered their share of service. There were 125 schools of nursing that were approved by the State Department of Registration and Education in 1926, and they enrolled 5,623 students that year. By 1939 the number of approved schools had been reduced to 104, but the enrollment had in the same time increased to 6,716 students.

THE TRAINING OF INTERNS

When in 1914 the Council on Medical Education made a canvass of hospitals, there were more medical students seeking internships than could be accommodated. Forty-two hospitals, including six mental and four other special hospitals, said that they would accept interns, and reported that they already had 240 interns on their services. In general, the attitude of hospitals toward internships has gradually been reversed, so that during the past few years there is keen competition between hospitals for available graduates of recognized medical schools. The medical and administrative staffs of hospitals have responded nobly to the effort of the Council to improve the quality of intern training. At present sixty-one approved general hospitals in the state are using and teaching 599 interns.

TABLE 4

Hospitals Approved for Training Interns by A.M.A. Comparing Illinois with Entire United States

Year	Hospitals Approved for Intern Training by A.M.A. In Illinois	Hospitals Approved for Intern Training by A.M.A. In U. S.	Interns in Hospitals Approved by A.M.A. In Illinois	Interns in Hospitals Approved by A.M.A. In U. S.
1914	42	603	240	3,095
1924	43	662	340	3,804
1932	55	691	519	6,181
1940	61	736	599	7,654

In the matter of necropsy performance,—one of the many functions of the teaching hospital, eleven of the approved intern hospitals had a necropsy rate of between 15 to 25 per cent during the year 1939; seventeen a rate of from 26 to 35 per cent; eighteen from 36 to 45 per cent; four from 46 to 55 per cent, and five a rate of 56 to 65 per cent. Beyond this, six obtained distinguishing rates in necropsy performance of 73, 77, 78, 79, 84 and 86 per cent, respectively. These figures are based on 18,803 deaths and 6,250 necropsies.

APPROVED RESIDENCIES IN SPECIALTIES

Early in the twenties there was increasing demand on the part of physicians who had served a general internship to continue their work for additional hospital experience before going into general practice, or as part preparation for the eventual practice of a specialty. By 1927 acceptable opportunities were provided for ninety-seven residents in sixteen Illinois hospitals. The increase, both in the hospitals that have successfully undertaken this work and in the number of physicians accepting these opportunities, have increased with a gradual rapidity, until at the present time thirty-two hospitals afford approved residencies for 350 graduates who have served approved internships. The lists of hospitals that are approved for intern training and those approved for residencies in specialties are maintained by rigid inspection and comparison with exacting requirements by the Council on Medical Education and Hospitals. The requirements include a variety of experience, material and facilities, all of which combine to increase the physician's knowledge and skill, as could be done in no other way.

TABLE 5

Residencies in A.M.A. Approved Hospitals Comparing Illinois with Entire United States

Year	Hospitals Approved for Residencies in Specialties by A.M.A. In Illinois	Hospitals Approved for Residencies in Specialties by A.M.A. In U. S.	Residencies in Hospitals Approved for Residencies in Specialties by A.M.A. In Illinois	Residencies in Hospitals Approved for Residencies in Specialties by A.M.A. In U. S.
1927	16	270	97	1,699
1931	27	363	165	2,139
1936	23	410	192	2,840
1940	32	555	350	4,709

DEVELOPMENT OF PUBLIC HEALTH SERVICE IN ILLINOIS

A. C. Baxter, M. D.
Director of Public Health
SPRINGFIELD, ILL.

The State Department of Public Health was organized in 1917 when the Civil Administrative Code of Illinois was adopted. Prior to that there was a State Board of Health, created in 1877. An ordinance creating an official public health agency that would have regulated the

qualifications of physicians, collected and compiled vital statistics and promoted sanitation was adopted in 1817 by the Territorial Assembly of Illinois. The first State General Assembly failed to reenact the ordinance.

Similar laws were enacted by the General Assembly in 1819 and in 1825 but were promptly repealed by succeeding legislative bodies, and the first permanent legislation for an official state public health service was enacted in 1877, when the State Board of Health Act and the Medical Practice Act were passed. Both were the direct fruits of a resolution adopted by the Illinois State Medical Society at the annual meeting in Bloomington in 1876:

"*Resolved,* That a Committee be appointed to memorialize the next legislature on the subject of the appointment of a State Board of Health; and, that with proper modifications, the act by which the Board of Health of Massachusetts was inaugurated be submitted to the same as a basis for the Illinois State Board.

"*Resolved,* That as members of the State Medical Society, each one shall consider himself bound to urge the propriety of a State Board of Health upon the representative from his district."

Two laws grew out of two very definite and distinct conceptions of the best means of promoting public health: 1. that good doctors are the dominant factor; 2. that sanitation, quarantine and hygiene will produce significant results in improving and preserving public health.

The State Board of Health was made responsible for the enforcement of both laws, a sop to both schools of thought. While a good deal was attempted in sanitation and control of smallpox by vaccination, the board was so limited in knowledge and money that little was accomplished except enforcement of the Medical Practice Act. Vaccination against smallpox was about the only procedure available for practical public health use in the prevention of diseases in 1877 and for a decade thereafter.

Apparently the General Assembly was not greatly impressed with what the board might achieve in health protection except by improving medical practice. The board was allowed $5,000, in addition to such licensure fees as it could collect, during its first two years. The annual appropriation for ordinary expenses did not exceed $10,000 prior to 1900.

The advocates of the "good doctors" theory dominated the situation for forty years. The board spent most of its energy in licensure of physicians and in raising standards of medical education and medical practice, because it was legally required to do so and lacked funds to take advantage of opportunities created by the growth of medical knowledge.

In 1877 bacteriology was just beginning to cast its first faint shadows. The State Board of Health Act anticipated the opportunity of the future and was mostly an empty gesture until after 1917.

During the forty years that the board functioned as the registration agency of physicians the accumulation of knowledge of preventive medicine was so rapid and voluminous as to require an agency entirely for public health service. Within those years the principles of bacteriology first took practicable form. Mosquitoes were found to carry yellow fever and malaria. Antitoxin and toxoid for control of diphtheria, vaccine for control of typhoid fever and rabies; methods for diagnosis of diphtheria, typhoid fever, tuberculosis, syphilis, gonorrhea, malaria and other diseases, the x-ray, an efficient prophylaxis against gonococcic infection of the eyes at birth, the susceptibility tests and other procedures and preparations of superlative importance in controlling communicable diseases were developed to practical usefulness from 1877 to 1917. Pasteurization of milk, chlorination of water and treatment of sewage were introduced and developed. The foundation was laid for scientific knowledge on diet and nutrition.

The realization of the importance of this development in the control of diseases made restless those who believed in promoting sanitation and hygiene as the principal public health activity, and in 1917 the State Board of Health was dissolved and the State Department of Public Health created. Registration was transferred to the new State Department of Registration and Education, created in 1917, and only public health functions were reposed in the State Department of Public Health.

The development of the official public health agency and program falls into four periods: 1877 to 1900, when appropriations for ordinary expenses never exceeded $10,000 per year and the board was on probation; 1900 to 1917 ap-

propriations climbed to $166,589 per year, and the board expanded and commanded recognition, but licensure of physicians still absorbed most of the energy of the board though its public health functions became more important; 1917 to 1935, when appropriations reached $638,294 per year, is the period of maturity when all resources were concentrated on preventive medicine, the people began to demand greater services and the department was regarded as a vitally important agency; the period of national cooperation began in 1935 when funds were made available to Illinois by the Federal government under the provisions of the Social Security Act, and with no change in fundamental policy, the department was able to provide services to a larger proportion of the population. Aggregate funds allotted to the department by the Federal government are:

Feb. 1-June 30, 1936	$ 68,410.83
July 1-June 30, 1936-1937	535,502.29
July 1-June 30, 1937-1938	537,503.00
July 1-June 30, 1938-1939	669,440.00
July 1-June 30, 1939-1940	776,902.00

Appropriations by the state government for the corresponding years were approximately:

1935-1936	$ 677,814
1936-1937	677,814
1937-1938	877,837
1938-1939	877,837
1939 1940	1,276,805

For the current fiscal year the department has from the state and Federal sources about $2,053,707.

During 63 years, almost exactly the average life span of a human being in Illinois today, the appropriated funds available grew from $2,500 to $2,053,707 per year. Variety and magnitude of services and favorable influence on health and life have been of corresponding growth.

The reason for this growth is the application of new knowledge in the prevention of diseases and the promotion of health which falls into three classes—1. sanitation; 2. disease prevention through vaccination and other strictly medical procedures; 3. hygiene, particularly infant and maternal care and nutrition.

STEPS IN ORGANIZATIONAL DEVELOPMENT OF STATE HEALTH SERVICE

From 1877 when it was created until 1915 the State Board of Health functioned as a single administrative unit because of the limited personnel and because the bulk of the work related to the registration of physicians. A diagnostic laboratory had been established, collection and compilation of vital statistics undertaken, investigation of epidemics and quarantine attempted and some work done in sanitation and education but no definite division of specialized activities was made prior to 1915, when personnel and activities were organized into bureaus for specialized service. These bureaus and the personnel in each were:

Bureau	Personnel
Executive (3 administrative)	13
Laboratory (bacteriologist and messenger)	2
Vital Statistics (statistician and 4 clerks)	5
Medical and Sanitary Inspection (5 medical and 3 dairy inspectors)	12
Sanitary Engineering (3 engineers)	5
Lodging House Inspection (chief and 5 inspectors)	8

This shows the strength and the general character of the work, other than the registration of physicians, which was undertaken as late as 1915. No public health nurses were included in the personnel.

In 1917 the board gave way to the department of public health, the registration of physicians was given up and the organizational units were designated as divisions, instead of bureaus; a division of tuberculosis was added, and from this time forward all department personnel was engaged in public health work. Two public health nurses were added to the staff.

In 1919 several new divisions were created and recognized by the General Assembly in the appropriation schedule: Child Hygiene and Public Health Nursing, Social Hygiene, Biological Laboratories, Public Health Instruction, Surveys and Rural Hygiene.

Subsequently divisions of dental health education (1935) and of industrial hygiene (1937) were created. Other shifts have been made so that in 1940 the divisions include the following: Executive, Communicable Diseases, Laboratories, Child Hygiene and Public Health Nursing, Sanitary Engineering, Vital Statistics, Public Health Instruction, Dental Health Education, Industrial Hygiene, Cancer Control, Lodging House Inspection.

Specialized units within divisions which rank almost with the divisions themselves include:

Pneumonia Control, Venereal Disease Control, Maternity Hygiene, Statistical Research, District and Local Health Administration, Community Sanitation.

Of particular significance was a plan adopted in 1936 for localizing the services, which called for 20 district units, each with a full time professional staff headed by a medical officer, made possible by Federal funds for public health work in Illinois. By 1940 all but one of the 20 units had been established, each with a medical officer, a nurse, a sanitary engineer and a clerk.

At the beginning of 1940 the total personnel of the department numbered 597, of whom there are 19 administrative officers, 66 other physicians, 136 nurses and 123 other professional workers such as bacteriologists, sanitary engineers, statisticians, nutritionists. This contrasts with 8 officers and employees of the State Board of Health in 1901 and 45 in 1915.

The type and volume of service undertaken at present by the State Department of Public Health are suggested by the appropriations for the biennium ending June 30, 1941, and by the amount of Federal funds allotted for the fiscal year ending June 30, 1940. These are as follows:

APPROPRIATED BY STATE

Fiscal Years July 1-June 30, 1939-1941

Divisions of the Department:			
I.	a.	General Office	$ 70,470
	b.	Purchase of Chicago Bldg.	125,000
II.	a.	Communicable Diseases	577,580
	b.	Transportation of Venereal Disease Patients	10,000
III.	a.	Diagnostic Laboratory	197,665
	b.	Marriage Law	50,000
IV.		Biological Laboratory	431,774
V.		Tuberculosis	31,400
VI.	a.	Sanitary Engineering	214,520
	b.	Sanitary Water Board Law	50,000
VII.		Vital Statistics	159,757
VIII.		Public Health Instruction	45,500
IX.		Child Hygiene and Public Health Nursing	161,930
X.		Dental Health Education	54,225
XI.		Lodging House Inspection	69,300
XII.		Cancer Control	29,000
Indirect Appropriations:			
		Printing	98,600
		Salaries State Officers	35,800
		Postage	85,500
Emergency Appropriation:			
		Pneumonia Serum	55,588
		Total Appropriations	$2,553,610

ALLOTTED BY FEDERAL GOVERNMENT

Fiscal Year Ending June 30, 1940

Public Health Service:	
a. General Purposes	$364,411
b. V. D. Control	215,386
Children's Bureau:	
Maternal and Child Health	197,105
Total Federal	$776,902

As a specific means of controlling various diseases free distribution of certain biological products were adopted early in the twentieth century, beginning as follows:

1905—Anti-rabic vaccine to poor patients,
1906—Diphtheria antitoxin,
1913—Smallpox vaccine,
1914—Silver nitrate solution,
Typhoid fever vaccine,
1922—Diphtheria toxin-antitoxin (Toxoid substituted later),
1936—Anti-rabic vaccine to all patients,
Convalescent poliomyelitis serum,
1937—Drugs for syphilis,
1938—Anti-serum for pneumonia,
Sulfapyridine for pneumonia,
Sulfanilamide for gonorrhea.

The department manufactures silver nitrate solution, anti-rabic and typhoid fever vaccine, diphtheria toxoid and other products. The volume of biologics, expressed in treatment or test dose units, distributed during the calendar year of 1939 is as follows:

BIOLOGICS DISTRIBUTED

Treatment or test doses	1939	1938
Toxoid, Diphtheria	193,707	193,202
Schick, Diphtheria	445,970	344,760
Typhoid Vaccine	115,508	64,918
Smallpox Vaccine	298,935	512,255
Anti-rabic Vaccine	4,274	5,151
Silver Nitrate	133,736	166,052
Tuberculin	35,840	16,905
Cost—$102,949.17		
Anti-syphilis drugs	1,206,814	
Sulfanilamide	169,150	
Cost—$96,112.23		

RESULTS OF PUBLIC HEALTH SERVICE

The results of public health service are the practical elimination of several deadly diseases, the suppression to a considerable degree of others and improvement of positive health, so that the average life span in Illinois has increased from 45 years in 1877 to 62 in 1940.

In 1880, for which detailed though incomplete mortality statistics were first available, 51 per cent of all reported deaths were among children under 5 years, only 12 per cent were among persons of 50 and over. In 1939 only 7 per cent of all deaths were among children under 5 while 67 per cent were among persons of 50 and over. This enormous saving of young life was due largely to the public health movement.

Diseases against which noteworthy progress has been made include smallpox, diphtheria, tuberculosis, typhoid fever, malaria, yellow fever, diarrhea, pneumonia. The number of deaths attributed to each and the rates per 100,000 estimated population in 1880 and in 1939 are shown in Table I.

TABLE I.—MORTALITY FROM CERTAIN CAUSES

	1880		1939	
Illinois	Deaths	Rate per 100,000	Deaths	Rate per 100,000
Tuberculosis	4,645	150	3,606	45.5
Diarrhea (und. 2 yrs.)	4,600	148	245	3.0
Pneumonia	4,378	142	4,191	52.9
Diphtheria	3,783	123	118	1.4
Typhoid Fever	1,652	54	107	1.3
Malaria	1,114	36	35	0.4
Smallpox	45	1.4	0	0
Total, these causes	20,217	652	8,302	105

Had the rates of 1880 prevailed in 1939, there would have been about 43,000 more deaths from the diseases listed in Table I than occurred.

There are about 10 cases for each death from tuberculosis, typhoid fever, diarrhea and diphtheria. Calculated on this basis there were about 335,000 fewer cases of those four diseases in Illinois during 1939 than there would have been with the prevalence rates of 1880. Illness from malaria and smallpox was likewise at a much lower rate.

Great improvement has taken place in the infant and maternal mortality rates, as shown in Table II.

TABLE II.—INFANT AND MATERNAL MORTALITY

Illinois	1881		1920	
Rates per 1,000 Births	Deaths	Rate	Deaths	Rate
Infants	11,826	219	11,614	84.8
Mothers (puerperal causes)			1,141	8.2

Illinois	1930		1939	
Rates per 1,000 Births	Deaths	Rate	Deaths	Rate
Infants	7,152	55.0	4,525	38.5
Mothers (puerperal causes)	693	5.4	346	2.9

The registration of births in 1881 was so incomplete that the infant death rate cannot be considered complete. Deaths were also incompletely reported, and the number of infant deaths reported in 1881 was greater than in 1920, although the population in 1920 was more than double that of 1881, and the number of births was much greater in 1920. Had the infant and maternal death rates of 1920 prevailed there would have been about 6,000 more infant deaths and about 600 more maternal deaths in 1939 than occurred.

Although the statistics prior to 1918 are incomplete, especially of births, they show a striking reduction of loss of life among the young, largely due to prevention of communicable diseases and improvement in dietary and hygienic practice.

The progress against communicable diseases may be revealed by showing what proportion of all deaths reported were attributed to these diseases as in Table III for 1880 and for 1939.

TABLE III.—PER CENT. ALL REPORTED DEATHS IN ILLINOIS

	1880	1939
Tuberculosis	10.3	4.1
Pneumonia	19.7	4.8
Diphtheria	8.4	0.01
Diarrhea	10.2	0.2
Typhoid	3.6	0.01
Malaria	2.4	0.004
Total these causes	44.6	9.5

To the six diseases in Table III was attributed 44.6 per cent of all deaths reported in Illinois in 1880. In 1939 only 9.5 per cent of all deaths reported were attributed to those diseases.

This is evidence of the enormous improvement in health and life resulting from a movement initiated by the Illinois State Medical Society which has attracted popular support as shown by public interest in preventive medicine and the voluntary health agencies which have contributed to the progress achieved.

Successful programs against syphilis and pneumonia have only begun in Illinois; there is a small beginning at cancer control and improvement of nutrition. Mental health is subject to great improvement.

A great deal of the responsibility for the practical application of preventive medicine necessarily rests on the State Department of Public Health.

ONE HUNDRED YEARS OF PUBLIC HEALTH IN CHICAGO

1840-1940

HERMAN N. BUNDESEN, M.D.
President, Board of Health
CHICAGO

1840—The year 1840 found Chicago with its fourth board of health, appointed by the city council under the act of incorporation which had been passed in 1837. The board consisted of three commissioners, a president and a health officer.

The Chicago Hydraulic Company, a private enterprise, began to construct Chicago's first water-works.

The population of the city was 4,479.

1841—An ordinance passed in May required the attending physician to give a certificate of the age, sex, disease, etc., of the deceased, to the head of the family, who was to give the certificate, before the burial, to the city sexton. This was the first attempt to gather vital statistics.

1842—An ordinance regarding burial of the dead was passed, and land purchased for a cemetery.

1843—The first city hospital was built near the lake shore and North Avenue for smallpox.

The death rate was 1 to 64.78 of the population.

1844—A severe outbreak of scarlet fever caused 306 deaths.

1845—Scarlet fever still was prevalent; $300,000 was spent for a hospital building.

1846—Scavenger service was begun and was given every Saturday morning.

There was much sickness and a free dispensary was opened.

1847—On March 30, Cook County Hospital was opened at North Water and Dearborn Streets, in Tippecanoe Hall.

A private hospital for the insane was opened.

1848—R. G. Ross, city marshal, made public the names of physicians who would vaccinate the poor without charge and a call was issued for all unvaccinated persons to be vaccinated at once. This seems to have been the first cooperative effort of the medical profession and city officials to prevent the spread of smallpox.

1849—Smallpox was prevalent; a district health officer was appointed for each city block, 45 in all, and on April 29 cholera was brought to Chicago by the emigrant boat "John Drew" from New Orleans. Immigrants from Europe also helped spread the disease. There were 678 deaths from cholera during the year, or 1 in 36 of the entire population.

1850—Cholera returned in July, causing 420 deaths during the year. Smallpox was prevalent. The mortality rate was estimated at 46.6 per 1,000. The population was 28,269.

1851—A new city charter gave additional health protection.

Smallpox and cholera were prevalent, and cholera caused 216 deaths.

1852—Cholera claimed 630 lives.

1853—Smallpox was prevalent. The council ordered removal of the pest house farther from the center of population.

Dysentery killed 54.

1854—The number of deaths, 3,834, with 1,424 due to cholera, was larger than ever before.

1855—Smallpox killed 30 and the quarantine placard was introduced with signs reading "Smallpox Here."

There were 147 deaths from cholera.

A city dispensary was established.

1856—The general health was much improved, though typhoid fever became prevalent in September.

1857—The board of health went out of existence because of the absence of alarming epidemics and probably also because of controversy over the staff of the new city hospital.

1858—The death rate from tuberculosis surpassed previous records with a rate of 392.2 per 100,000 population.

The principal causes of death were: tuberculosis 334; croup 188; dysentery 224; scarlet fever 233; pneumonia 77; teething 196; cholera infantum 68; convulsions 63; puerperal fever 45; typhoid fever 49; unknown 66; stillborn 49.

1859—The city hospital was leased to private physicians though city patients were cared for at $3.00 a week.

1860—The board of health and the office of city physician were abolished due to financial depression and the absence of alarming conditions and the street commissioner was charged with the duties of the health officer.

1861—Camp Douglas was established and 30,000 soldiers were mustered into service. The board of police was charged with guarding public health.

1862—Policeman Charles S. Perry became acting health officer.

Diphtheria increased: smallpox was epidemic and there was a marked increase in deaths from all causes.

The city hospital at 18th and Arnold Streets was opened as an army hospital.

1863—Sanitary conditions grew worse. Conditions at the "pest house" were inquired into by the Chicago Medical Society. Frightful mortality occurred among prisoners at Camp Douglas. Smallpox increased and erysipelas was epidemic during the winter.

1864—Deaths from erysipelas and low-grade fevers doubled, smallpox trebled, measles increased fivefold, pneumonia killed many and there was a large increase in croup, diarrhea, and dysentery.

1865—The foulness of the Chicago river and the insanitary condition of the city caused a mass meeting to be held in order to secure action, and a state law was passed defining the duties of the board of police as a board of health and authorizing appointment of a health officer. Sanitary conditions improved.

1866—Cholera caused 990 deaths out of 1,581 cases.

1867—By act of legislature the board of health was recreated, and members were appointed.

1868—Meat inspection was inaugurated at the Stock Yards.

There were 580 cases of venereal disease as against 4,147 of all other diseases treated in civil hospitals.

1869—For the first time attention was given to milk inspection. Adulteration of milk and sanitation of milk depots and retail sales places were the only points investigated.

1870—The first milk ordinance was passed making it unlawful to sell skim milk unless so labeled.

1871—The great Chicago fire occurred October 8 and 9, destroying 18,000 buildings, making 93,000 persons homeless, killing 107 persons. Dr. John H. Rauch was in charge of health work. Records of the board of health were all lost in the fire, including those of births and deaths. There was a high mortality the month after the fire.

1872—An aftermath of the great fire was the death rate of 27.64 per 1,000, an increase of 32.6 per cent. over that of the previous year. Smallpox attacked 2,382 and killed 655. The fatality among children under 5 years of age was the highest ever recorded, cholera infantum taking heavy toll.

1873—Cholera caused 48 deaths. Smallpox killed 517 of the 1,766 it attacked.

1874—The new smallpox hospital was completed at 26th Street and California Avenue.

There were 9,794 births registered.

1875—Much vaccination was done, especially in schools and only 15 cases of smallpox were reported.

1876—The department of health was created, superseding the board of health. The greatest epidemic of scarlet fever in the history of the city occurred.

1877—Reporting of contagious diseases by physicians was first enforced. Scarlet fever cases were required to be placarded.

1878—Twenty-seven indictments were made of operators of slaughtering and rendering plants for maintaining public nuisances.

The highest death rate to date from whooping cough was recorded: 53.8 per 100,000 population.

1880—The diphtheria death rate surpassed all previous records with 290.7 per 100,000 population.

1881—A smoke control ordinance was passed.

A severe smallpox epidemic occurred, there being 2,997 cases and 1,180 deaths.

1882—Smallpox continued epidemic until September with 3,611 cases and 1,292 deaths. The department of health performed 110,540 free vaccinations. Immigrants suffering from smallpox arrived daily. Immigrant inspection was undertaken by the national board of health in June.

1883—The first course of lectures on germ theory of disease was given in the Chicago Medical College by Dr. H. Gradle.

1885—All of the 140,000 children attending schools were examined and found to be protected from smallpox.

First attention was called to flies as carriers of disease, by Dr. F. W. Reilly in an editorial in the *Morning News*.

1889—Rules were promulgated by the department of health regarding drainage and plumbing. Five women inspectors of tenements were appointed.

1890—A severe outbreak of influenza began in January and continued until April.

1891—The highest typhoid fever death rate in the history of the city was recorded, 173.8 per 100,000.

A comprehensive plumbing ordinance was passed.

1892—Diphtheria, typhoid fever and typhus became reportable diseases.

1893—The World's Columbian Exposition was visited by 30,000,000 people.

The first public bath house, the Carter H. Harrison, was established at 759 Mather Street.

There were 140 cases of smallpox with 23 deaths. The death rate from tuberculosis was unusually high. The highest rate of deaths from violence was recorded, 151.7 per 100,000 population.

1894—Smallpox was epidemic with 2,332 cases and 1,033 deaths; 1,084,500 vaccinations were performed.

A circular of information on hot weather care of babies was first issued by the department of health in June.

The municipal laboratory was equipped to make analyses of milk, relieving the private laboratories of this work. In September examination of diphtheria cultures was begun.

1895—The first diphtheria antitoxin was issued on October 5 and a corps of antitoxin administrators was appointed.

Daily analysis of the water supply was inaugurated.

1896—Physicians were given the responsibility of quarantining cases of contagious disease under their care.

1898—The department inaugurated a system of reporting births by postal card, which was continued for three years.

During the Spanish-American War soldiers with typhoid fever were brought to Chicago hospitals.

1900—The department of health published a study of the increasing span of life in Chicago, and demonstrated that the average span has more than doubled in a generation, the average for 1898 being 29.4 years as compared with 13.9 years in 1869.

The department was awarded a gold medal at the Paris Exposition.

1901—An ordinance was passed prohibiting spitting in public places.

"State of City's Health" was published every week in newspapers.

Free bathing beaches were opened, the expense being borne by subscriptions by philanthropic citizens.

1902—There was a severe outbreak of typhoid fever in West Side river wards, due to pollution of water supply "wells" at the pumping station.

Fourth of July "Dont's" were first promulgated by the department of health.

The department started publication of a weekly bulletin, *"State of Chicago's Health."*

1904—Country dairy inspection was inaugurated, the work being mainly educational.

The lowest death rate from all causes attained in the city to date was 13.85 per 1,000 for the year; the diphtheria rate being 21.5 per 100,000 population.

1905—The Thirty-ninth Street intercepting sewer was opened in December, following which there was a marked decrease in the typhoid fever death rate.

An act of legislature extended free Pasteur treatment to poor persons to prevent rabies.

Free distribution of antitoxin was resumed.

1906—The Chicago Society of Social Hygiene was organized.

High price of antitoxin was broken. An arrangement with the Memorial Institute of Infectious Diseases lowered the price of antitoxin.

1907—The practice of allowing physicians' responsibility for quarantine was discontinued.

A severe epidemic of scarlet fever occurred during the winter, owing to infection of the milk supply in the country. There were 2,058 cases of the disease in January.

Reporting of tuberculosis was enforced. The school nursing service was inaugurated. An ordinance provided for the heating and ventilation of street cars.

1908—One hundred physicians were sent to the congested districts during July and August to instruct mothers in the care of babies.

1909—The baby welfare campaign was carried on by house-to-house visiting by department of health nurses.

1910—School dental service was inaugurated by the Chicago Dental Society.

New milk standards were applied to ice-cream.

A municipal venereal disease clinic was opened and maintained about six months in the Iroquois Memorial Hospital, being conducted by a volunteer staff.

Dispensaries were required to report venereal diseases.

Moving pictures were used for health education.

No deaths occurred from smallpox since 1905.

1911—Ordinances prohibited common drinking cups and common roller towels.

The department of health started giving the Pasteur treatment for rabies, and anti-typhoid vaccinations at the Iroquois Memorial Hospital.

The department laboratory began making Wassermann tests.

1912—A new ordinance required all milk to be pasteurized unless produced on inspected farms, and required that milk be refrigerated in transit.

1913—Scarlet fever was prevalent, with 10,600 cases and 906 deaths. Diphtheria attacked 8,593 persons and killed 952.

Four infant welfare stations were established by the department of health.

Of the three food-borne outbreaks of typhoid fever, two were due to milk infection, and the other to a carrier working in a downtown restaurant.

1914—This was the first year in which the cases of pneumonia reported exceeded the number of deaths from the disease.

The department started distribution of silver nitrate solution for preventing blindnes in newborn babies.

There were 68 cases of typhoid fever traced to milk infection.

The Municipal Tuberculosis Sanitarium was opened.

1915—Following the Eastland disaster on July 24, the department of health immediately immunized against typhoid fever those who had been immersed.

The typhoid death rate was 5.3 per 100,000 population.

The death rate of children under one year of age was lowest on record, 2.53 per 1,000 population.

1916—An outbreak of infantile paralysis caused 34 deaths out of 254 cases. It was the policy to hospitalize all cases. The Research Commission on Infantile Paralysis was appointed in August.

1917—New ordinances required: reporting and treatment of venereal diseases; residences to be screened against flies; stables and barns to be screened. Another made it unlawful to permit weeds to grow on vacant lots.

Immunization against diphtheria with von Behring's toxin-antitoxin was begun in the public schools and institutions.

There were 292 cases of smallpox.

1918—Influenza became a reportable disease on September 16. On September 21 the pandemic of influenza reached Chicago, attaining its maximum on October 17 with 381 deaths from pneumonia and influenza on that day.

The lowest typhoid death rate was recorded, 1.4 per 100,000 population. This rate was lower than that of any other city in the United States having a population of 100,000 or over.

Tuberculosis had the lowest death rate ever recorded in the city, 146 per 100,000 population. The lowest death rates for scarlet fever, 1.8 per 100,000 and for measles, 2.4 per 100,000, were also recorded.

1919—In January the Department of Health won its first case in the prosecution of landlords for failure to supply sufficient heat to tenants.

1920—The right of the department to quarantine carriers of contagion was upheld by the Superior Court of Cook County.

On May 7, a curled hair factory was closed on account of five deaths from anthrax among its employes.

On April 7, an ordinance was passed providing for the inspection of ice cream factories.

Terminal disinfection in scarlet fever and diphtheria was discontinued on August 1.

1921—This was the fifth successive year in which Chicago had the lowest typhoid fever death rate of any city in the United States of more than 500,000 population, with a rate of 1.1 per 100,000.

There were 246 cases of smallpox with four deaths, and 73,764 cases of communicable diseases were reported for the year.

The general death rate from all causes was 11.08 per 1,000 of population.

1922—In February an Illinois Supreme Court decision ruled that the commissioner of health had no legal power to make rules and regulations, and therefore could not quarantine typhoid carriers.

There were 95 cases of smallpox with 15 deaths.

Eighteen new infant welfare stations and five prenatal stations were established.

1923—The commissioner of health appointed a committee on prenatal care in June. This marked the first concerted effort to coordinate the activities of all agencies doing prenatal work in Chicago.

Inspection of summer camps for children was inaugurated, with complete cooperation by the various organizations operating out-of-town camps for Chicagoans.

From October 13, 1923, to January 24, 1924, an outbreak of typhoid fever spread in the dis-

trict supplied by the Hyde Park Crib, and the waters along the south shore were found to be contaminated with sewage following heavy rains.

1924—A system of making hourly tests for residual chlorine in the discharging mains of the various pumping stations was begun in March.

On January 1 a milk strike was declared by milk producers because of inability to agree on the price with distributors.

Restaurants were required to serve milk in bottles or urns beginning in March, so that butter fat might be equally distributed in bulk milk served.

Deaths from diarrheal diseases in children, measles, diphtheria and croup reached the lowest rates they had ever attained.

1925—Conferences for care of pre-school children were inaugurated. Department of health nurses began periodical visits to homes of newborn babies once a month, continuing until the child was a year old.

The department of health began vigorous enforcement of the provisions of the state law requiring registration of births within ten days after birth.

Inspections of drinking fountains resulted in orders to install sanitary types in place of insanitary ones.

Much smoke abatement work was done during the year.

1926—On January 13 the city council passed an ordinance creating a board of health with five members to be appointed by the mayor.

On April 1 it was required that all milk sold in Chicago be obtained from tuberculin tested cattle.

A comprehensive study of air pollution by carbon monoxide in the streets was undertaken by the bureau of sanitary engineering and bureau of laboratories.

1927—A survey of the Chicago Department of Health, made by a representative of the American Public Health Association on the basis of work done during 1926, gave the department a perfect score on the reporting and keeping of records of communicable diseases; control of diphtheria, typhoid, smallpox, scarlet fever, ophthalmia, and venereal disease; and diagnostic surveys.

The use of toxic shoe dyes was prohibited because of alleged poisonings in 1926.

1928—Observations on defects in hospital plumbing and sterilizers were made, revealing an important cause of post-operative infections. The beneficial effects of these observations reached all parts of the world.

1929—An ordinance licensed and regulated the use of poisonous gases for fumigating.

An outbreak of food poisoning was due to the use of cyanides for polishing of silverware.

Two cases of botulism with one death occurred, following the ingestion of imported canned onions.

Epidemic cerebrospinal meningitis was more prevalent than in any year since 1912, with 216 deaths out of 387 cases.

1930—An intensive drive against diphtheria begun on September 8 lasted until November 26, 400,219 toxin-antitoxin injections being given during the campaign.

Infantile paralysis was unusually prevalent, with 191 cases and 25 deaths.

1931—During the autumn carbon monoxide gas escaping from defective installations of gas water heaters caused 46 cases of asphyxiation.

In December an ordinance established a board of health of three members.

1932—An ordinance was passed increasing the membership of the board from three to five.

An intensive campaign for the eradication of diphtheria was carried on by a staff of 300 nurses with a supervising nurse and two motor buses, equipped for giving diphtheria inoculations, with physicians in charge. Physicians were sent to homes of the indigent and of mothers who could not go to the welfare station. Buses were furnished to carry mothers to and from the stations. There were 1,266 cases of diphtheria and 68 deaths compared with 154 cases and 9 deaths the year following the campaign.

1933—Inspection of tourist camps located in the city was begun May 15 to see that proper sanitation was maintained.

In June an outbreak of amebic dysentery began. There were 1,409 cases, scattered in 43 states, the Territory of Hawaii and three Canadian provinces and 98 deaths. This was the first recognized water-borne epidemic of the disease in a civilian population.

Its cause was traced to water contaminated through faulty plumbing.

On December 5 the board of health, because of several cases of poisoning from eyelash dyes,

issued an order prohibiting the use of dyes containing paraphenylenediamine.

There were 12 deaths from typhoid fever, the lowest number so far recorded, giving a death rate of 0.33 per 100,000 for this disease. Sanitary surveys and inspections were made during A Century of Progress exposition.

1934—In February a plumbing survey for cross-connections in hotels and mercantile buildings was begun to prevent future amebic dysentery outbreaks.

On April 24 an ordinance was passed permitting the addition of vitamin D to milk.

As a result of drinking from contaminated water supply at the Union Stock Yards fire, May 19, 69 persons contracted typhoid fever, 11 of whom died.

A project was begun in July to inspect and develop for demolition, useless, unsafe and insanitary buildings.

No cases of smallpox were reported during 1934, the first year this had occurred since 1900.

1935—A milk ordinance required that only Grade A milk and milk products be sold in Chicago.

An intensive program in infant welfare work was carried on. The nurses of the health department were given a course in the care of premature infants. Elaborate measures were inaugurated for the care of premature infants. On April 12 a mother's milk station started operating at the health department offices, to supply breast milk to premature, sick, or debilitated infants whose parents could not afford this expense.

In November a survey of occupational morbidity and mortality was begun in the metropolitan area, by the Chicago Health Department in cooperation with the United States Public Health Service and the Works Progress Administration.

There were 24,199 reported cases of measles, the highest ever recorded. Typhoid fever set an all-time low record with 69 cases.

1936—Chicago had the lowest infant mortality rate of any of the large cities of the United States in 1936 with 38.5 per 1,000 live births.

Note: Infant mortality rate figured on number of live births, reliable birth report figures being available.

There were 210 deaths from sunstroke and heat exhaustion as against 11 deaths from the same cause in 1935.

The birth rate declined to approximately 13.7 per 1,000 population, as compared to 14.2 in 1935.

About 1,000 premature infants were under supervision, and two additional premature stations were opened, making 31 conferences available each week.

One baby lost its eyesight because of ophthalmia neonatorum.

1937—The death rate from all causes was 10.3 per 1,000. There were 36,978 deaths in the estimated population of 3,607,000.

There were 10 deaths from typhoid fever, 12 from measles, 61 from scarlet fever, 39 from whooping cough, 84 from diphtheria, 261 from influenza.

A housing survey project was conducted in which 70,566 buildings were inspected.

There were 49,633 live births, a rate of 13.8 per 1,000 population.

1938—Registration and attendance at prenatal and infant welfare conferences improved.

Nearly a quarter million children were examined for dental defects and were referred to the family dentist, or, if unable to pay, were cared for in the board of health dental clinics.

The general death rate, 9.7 per 1,000 population, was the lowest ever attained, as were also the infant death rate and the maternal death rate, with 33.7 per 1,000 live births and 2.7 per 1,000 live births, respectively.

The birth rate with 51,660 births was 14.3 per 1,000 population.

Deaths from diphtheria decreased approximately 20 per cent. since 1937; from scarlet fever, 15 per cent. There was 1 death from infantile paralysis, a decrease of 97 per cent.

1939—There was a 10 per cent. decrease below the previous all time low record attained in 1938 in infant mortality, with 31.3 deaths under one year of age per 1,000 live births.

The mortality rate increased slightly over the previous year, being 10.0 per 1,000 population, as compared with the all-time low rate of 9.7 in 1938. The death rate of typhoid fever, 0.2 per 100,000 population, was an all-time low record for Chicago, and one of the lowest in the world.

Attendance at prenatal conferences increased over 6 per cent.

Approximately one-quarter of a million school children were instructed or examined through the dental hygiene program.

Over 200,000 persons voluntarily took blood tests.

A United States Public Health Survey gave Chicago's milk supply a grade of 97 per cent., one of the best on record.

DEVELOPMENT OF THE DIVISION OF SANITARY ENGINEERING OF THE STATE DEPARTMENT OF PUBLIC HEALTH

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By 1915 the need for full time systematic engineering was so apparently a necessity to the State Board of Health that the legislature appropriated funds for the establishment of such a division with a chief engineer, 1 assistant engineer for field work, 1 for water and sewerage laboratory work, a stenographer and clerk.

Illinois was fortunate in having this division organized by an engineer who came from the position of chief engineer of another state board of health and had served as assistant engineer and chief engineer to two other boards of health. Upon his voluntary resignation in 1920, he was succeeded by the principal assistant engineer who continued as chief until his death in 1935. The then principal assistant engineer who had been in the state service since 1925 succeeded him and thus the division has been able to develop and function progressively.

An integral part of modern public health activities, environmental sanitation plays a big part as to water supplies including purification, sewerage including sewage treatment, stream pollution prevention and abatement, milk pasteurization and dairy sanitation, camps, rural school sanitation and control of disease carrying insects such as mosquitoes and flies. These are all functions of the division of sanitary engineering.

Later legislatures have provided for expansion of the division so that it is now comprised of 1 chief sanitary engineer, 13 assistant sanitary engineers, 5 milk sanitarians, 2 swimming pool sanitarians, 9 water and sewage bacteriologists, chemists and laboratory helpers, 2 engineering assistants, 12 clerks and stenographers. In addition, the Federal government through its social security program of public health work has helped to provide 18 sanitary engineers for field work. Since the establishment of the division, many new public water supplies, sewerage systems, milk pasteurization plants, swimming pools and industrial waste treatment units have been installed and millions of dollars have been spent on improvements to older systems. Plans for the majority of these improvements have been reviewed by our engineers. There has been a decided decrease in the typhoid fever death rate and there has been no epidemic of typhoid or other intestinal illness caused by a water supply that has been approved by the state department of health based on engineering studies and laboratory examinations. No diseases that may be transmitted through milk have been attributed to milk from an approved pasteurization plant. A vast amount of work has been done on sewage and industrial waste treatment to improve stream sanitation.

In 1925 the legislature passed a milk pasteurization law to be enforced by the State Department of Public Health. The engineering division through repeated inspections and investigations and cooperation with milk plant owners has brought about a change in milk pasteurization so that any one may use milk labeled "pasteurized" with reasonable assurance that the milk is free from any disease-causing organisms.

Prior to 1918 there was little sanitary control of water in drinking water tanks on trains and the handling of such supplies often exposed the water to contamination. Since that time annual inspections and analyses by this division for the U.S.P.H.S. has eliminated sources of supplies of doubtful quality and improved water handling equipment, so that drinking water supplies on all common carriers are reasonably safe and clean.

In 1915 there were about 66 sewage treatment plants and since that time this has increased to 265, serving a state population of 5,417,500. The installation of these plants has

provided better sanitary facilities within municipalities and has helped protect streams from pollution. The greater provision of sewers and sewage treatment is due largely to passage by the legislature of the Sanitary Water Board law in 1929 that gave authority for control of pollution of surface and underground waters to a board consisting of the directors of the following departments of state government: public health, conservation, public works and buildings, agriculture, and a representative of the manufacturing interests, appointed by the governor. The Chief Sanitary Engineer of the State Department of Public Health acts as the technical secretary of this board. All complaints of pollution are investigated by the engineering staff. This board has done notable work and has seldom had to envoke a penalty for violations of orders. In the majority of cases, persons, municipalities, industries, found causing pollution of water courses have voluntarily proceeded with the necessary engineering structures to prevent further pollution. Stream pollution surveys have been conducted by division engineers of all the streams in Cook County, Fox River Valley, Illinois River, Wabash River and other minor streams in the state with a reduction of the pollution of these watercourses.

In 1915 there were approximately 400 public water supplies in Illinois, several coming directly from surface sources without any purification and none providing equipment for removing either the iron or minerals that cause hardness. Since 1915, 243 public water supplies have been installed. All surface supplies used for drinking are provided with purification equipment. In the past ten years the tendency has been to provide units for the removal of iron and minerals making it more desirable for domestic purposes. At the present there are over 75 municipalities with equipment to remove iron or excessive hardness. This is all due largely to this division.

The 1930 swimming pool law gave the department of health power to set up rules and regulations for the design and operation of all pools. The swimming pool program has gained national attention and has resulted in considerable improvements in facilities. A scoring system based on sanitation, construction, location, equipment, water quality, etc., has done much to envoke a keen rivalry among the 500 or so pools to improve their grace and sanitary conditions.

In 1915 practically no effort was expended on rural sanitation such as school facilities, county fairgrounds, recreational camps, tourist camps or industrial waste pollution. Today considerable effort and time is being given to these matters in order to provide sanitary facilities for school children and particularly the rural citizens. It is interesting that 65 per cent of all rural school toilet facilities and 85 per cent of the water supplies in rural schools are unsatisfactory. With the help of county superintendents and school directors, considerable improvement has been made in these conditions. Industrial waste pollution abatement has made many of our streams fit for fish life, cattle watering and recreational purposes.

In 1918 there was no P.W.A., W.P.A., C.C.C., or F.H.A. and each of these has required considerable time of this staff in review and consultation relative to the governmental work in their various fields.

Since 1934 the division has sponsored a W.P.A. project on malaria control, which has resulted in the drainage of large areas where malaria carrying mosquitoes breed. Considerable education in mosquito control projects is carried on in the various communities of the six mosquito abatement districts formed under the state mosquito abatement law.

The division has supervised a W.P.A. project for community sanitation under which over 13,000 sanitary pit privies in rural and unsettled areas have been built since 1934.

In 1915 the number of inspections made by the sanitary engineers for all purposes was about 200, that in 1938 was 5,317. The increase is due to modern living with its greater dependence upon public health measures. In 1918 the typhoid death rate per 100,000 population was 8.2, whereas, in 1938 it was 0.7. Environmental sanitation has contributed considerably to this saving of life. Infantile diarrhea in children under 2 years, which in some cases has been attributed to unpasteurized milk, in 1925 showed a death rate of 31.1, in 1938 it was 5.4.

The educational program of the division, cooperating with other divisions, has increased greatly. Under this program articles are prepared for the various department organizations, civic organizations are addressed, state and national meetings doing work allied with public health are held and assistance is given in preparing department exhibits at the state, county and local fairs. Much educational work is carried on by correspondence; over 12,000 letters were written in 1939, besides a large number of laboratory form letters including those regarding milk pasteurization plants. Approximately 10,000 pamphlets giving information on improvement of environmental sanitation are mailed out yearly.

To aid in the education of water, sewage, swimming pool and milk pasteurization plant operators the department holds sectional meetings, an annual state-wide conference and short course, issues quarterly publications to this personnel to promote better operation of these utilities.

In addition to the functions performed by the engineers, this division provides laboratory services which include bacteriological, chemical and biological analyses of samples of water from public, institutional and private, school, camp and swimming pool water supplies; analyses of sewage, industrial waste, streams, ice, filter sand, and chemical analyses of such other materials as may be necessary to systematic performance of the duties of this division and of the sanitary water board. The laboratory staff reports results of analyses, keeps in close touch with field data and assists in interpretation of laboratory analyses. In 1918 about 200 samples were analyzed, in 1938 about 12,931.

The personnel of this staff is available for emergency in providing safe water supplies, sanitary sewage disposal and environmental sanitation during disasters such as floods and tornadoes. The two greatest disasters since the organization of the division were the tornado on March 18, 1925, which swept across southern Illinois and the Ohio river flood in January, 1937. Although environmental sanitation during these disasters has commanded public attention, the greatest good has been accomplished by the regular, continuous and systematic attempt to make water supplies adequate, clean and safe, to secure sanitary disposal of sewage in order to keep streams undefiled and clean, to improve the quality of milk supplies, to make swimming pools and bathing places safe and clean and to assist in all those activities of a modern public health department that involved knowledge of sanitary engineering.

DEVELOPMENT OF DIAGNOSTIC, BIOLOGICAL AND RESEARCH LABORATORIES OF THE STATE DEPARTMENT OF PUBLIC HEALTH (A HISTORICAL OUTLINE)

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The history of the Division of Laboratories of the State Department of Public Health is one of expanding usefulness to the medical profession and thus to the entire state. The first laboratory was established in Springfield by the State Board of Health and began operation in the fall of 1904 under unostentatious circumstances, supported by funds intended for another purpose.

During its thirty-five and one-half years the specimen-volume has increased several hundredfold and types of regularly performed examinations from four to more than twenty.

Diagnostic service during the first five years consisted of examination of throat cultures for diphtheria bacilli, sputum for tubercle bacilli, blood for typhoid agglutinins (Widal test), and blood smears for malarial parasites. In 1909 examination of animal heads in suspected rabies was begun. During the World War and in the years immediately following, a country-wide increase of interest in diagnostic laboratory work occurred, largely due to services required by the army and navy. In the laboratories of this department, between 1917 and 1920, the work was extended to include Wassermann tests on blood and spinal fluids, dark-field examinations for Treponema pallidum, examination of pus for gonococci (1917); feces, urine and blood for typhoid bacilli, feces for dysentery bacilli, spinal fluids for meningococci and typing of pneumococci (1918); complement fixa-

tion tests for tuberculosis and gonorrhea, colloidal gold tests and diphtheria virulence tests (1920).

The division has always adopted new procedures and policies as soon as their superiority and reliability became evident. The Kahn test was compared with the Wassermann test and when found to be superior was adopted (1926) as the standard. Illinois was the first state outside of Kahn's own state of Michigan to recognize the merits of his new method.

In order to give prompt diagnostic service to the whole state branch laboratories were established in 1915 in Chicago and Mt. Vernon. Branches were set up in Urbana (1916), Galesburg (1916), Rockford (1917), Moline (1918), Ottawa (1920), East St. Louis (1922), Decatur (1924), Palestine (1925), Carbondale (1925), Kankakee (1927). Some of these were maintained only a short time and only three have remained in continuous operation to the present: Chicago, Urbana and Carbondale. The Galesburg laboratory was reestablished in 1938.

The early work of the branches was handicapped by a lack of sufficient funds and all of them, from 1915 to 1925, were maintained by subsidizing local laboratories. Although it was originally intended that they furnish a general diagnostic service, it was necessary to restrict their program to diphtheria diagnosis. Diphtheria was a statistically important disease in those days. From these have developed the four well-equipped branches which furnish complete diagnostic service to Chicago, Champaign, Carbondale, Galesburg and surrounding territories. The Carbondale laboratory (1925), set up in an emergency primarily for tornado relief, was continued as a permanent laboratory for general diagnostic work. In 1927 the Chicago diphtheria laboratory became the Chicago Branch laboratory rendering the same diagnostic service as that provided by the main laboratory. The last diphtheria laboratory was discontinued in 1932. The present policy is to maintain a few well-distributed branch laboratories providing complete and dependable service.

Much of the diagnostic work is done in municipal and private laboratories over which the department of public health exercises no legal control. Nevertheless, through years of co-operation the division of laboratories has established standards in some of the most commonly employed procedures with their hearty support. Standardization has assumed such importance that a co-ordinating laboratory was set up in 1937 to examine those laboratories desiring to be on an approved list. These are inspected and frequently examined as to accuracy in diagnosis by means of check specimens. Most of the larger laboratories and many of the smaller ones have met the standards for the performance of blood tests for syphilis, examination of smears for gonococci and typing of pneumococcal infections.

Although the services of this division are mainly diagnostic, research and the production of biologicals constitute an important part of its program. The manufacture of biologicals was officially recognized by the General Assembly in 1919 as a legitimate and necessary function but failure to provide the facilities made it impossible until about six years ago. All of the typhoid vaccine, rabies vaccine, diphtheria toxoid, Schick test toxin and silver nitrate solution which are distributed free by the department of public health are manufactured in our own plant and a number of other biologicals employed in diagnostic procedure are prepared for use in our laboratories and in those on the approved list. This saves the state approximately $100,000 annually at the present and enables us to maintain our own standards in production. Limited plant facilities stand in the way of extending this service to other biological products.

Special mention should be made of the trailer, fully equipped as a laboratory, which can be dispatched on short notice. It has rendered important service in epidemics and situations where local laboratory facilities were lacking or inadequate. The mobile laboratory is a symbol of the spirit of the whole division and of the entire department—readiness to meet any health emergency.

A CENTURY OF PATHOLOGY

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When the Illinois State Medical Society was founded one hundred years ago, Pathology as a highly developed science was unknown. Medical students obtained their knowledge of the human body and disease through lectures, dissection and clinics. Until about 1890 chemistry was the only subject which provided laboratory work as we understand it today. In 1840 there were no medical schools in Illinois and the pioneer physician received most of his education in the offices of preceptors.

Dr. George Weaver[1] states that one of the things these preceptors could do to good advantage was to instruct their students in practical anatomy. One of the chief problems in connection with such instruction was the supplying of material for dissection. This was imported from a distance or, more often, stolen nearer home.

Many gruesome tales are told of these early teachers of anatomy and their students. The methods of securing subjects for dissection in a small community were always open to question and for years the well founded fear of "grave robbers" haunted rural communities.

During the forties the anatomical question proved the Nemesis of three of the four medical schools founded in the state in that decade, the only survivor being Rush Medical College. At Jacksonville the medical building of Illinois College was once surrounded by an angry mob seeking vengeance for the supposed exhuming of the body of Governor Duncan for anatomical purposes.

Franklin Medical College at St. Charles came to an untimely end in a riot caused by the theft of the body of a prominent young woman in Sycamore by two of its students. One of the students was killed, and Dr. Richards, the school's founder, was shot and forced to leave the city. The Rock Island Medical College, which had only one year of existence in Illinois under that name, saw some "excitement" over the anatomical question and changed its name to the College of Physicians and Surgeons of the Upper Mississippi, After another year it moved across the river to Davenport again changing its name.

These early schools had lecture rooms, a dissecting room and a chemical laboratory of a simple sort. The departments of anatomy were usually equipped with charts, and their announcements mentioned "dissected preparations for purposes of demonstration," "cabinets" of chemicals, minerals, etc. Apparently to divert public attention from the local origin of the subjects for dissection, both the medical schools at La Porte, Indiana, and at Jacksonville stated in their circulars that an ample supply of subjects was obtained from "abroad." Two features of which the schools always boasted were their microscopes and "anatomical museums."

The founding of Rush Medical College occasioned the advent to Chicago of three pioneers in the field of medicine, Doctors Daniel Brainard (1812-1866), James Van Zandt Blaney (1820-1874) and Nathan S. Davis (1817-1904), the latter having the distinction of being the first professor of Pathology in Chicago.

Dr. Brainard performed the earliest autopsy in Chicago of which Dr. Ludvig Hektoen[2] was able to find any record. It was made in 1844 on an acephalic fetus with an unusual malformation of the heart, which was illustrated by a drawing. His interest in experimental research continued, for in 1853 Brainard presented two papers to the Academy of Sciences in Paris setting forth the results of his experiments on rattle-snake venom in pigeons. As reported by Dr. Hektoen[3] "The venom caused spasm of muscles, especially those of respiration; it deprived the blood of fibrin and changed the form of red corpuscles; solution of iodine and of iodide of potassium had some antidotal effects."

Chicago's pioneer chemist was Dr. James Blaney, who was working on chloroform at the same time Simpson discovered its use as an anesthetic. He was succeeded by two equally distinguished teachers, John H. Long and Walter S. Haines.

In 1850, John McGirr performed what was probably the first experiment in infectious disease in Chicago when he made inoculations of measles in the hope of producing protection by a mild attack.

Dr. DeLaskie Miller,[4] assisted by E. F. Ingals, performed an autopsy on the body of a boy, 20 months old, who died with symptoms of peritonitis in a case of impaction of the vermiform appendix, in 1862.

During these same years Dr. Blaney stressed the value of autopsies and continually urged his

students to be present at post-mortem examinations.

Among the hospitals it was Cook County which really introduced Pathology to the Middle West in 1878. Steps in this direction had been made as early as December, 1865, with the appointment of Dr. Henry Lyman as "curator of the dead house." Because of his youth and recent introduction to Chicago he applied for this lowly post and obtained it on the grounds that as an intern in Bellevue Hospital and in the U. S. Army hospitals he "had probably made more autopsies than any other physician in Chicago."[5]

However, at this time there was no microscopic and no clinical laboratory in the hospital, asepsis was unknown, and physicians and surgeons insisted on doing their own dissecting. This situation prevailed until Dr. Hosmer Johnson became pathologist in 1870. Then he insisted on having first claim to material in the dead house for teaching purposes.

In 1877, Isaac N. Danforth, the one pathologist worthy of mention before Christian Fenger, came to Cook County Hospital. He had been made pathologist to St. Luke's Hospital in 1870, was lecturer on Pathology at Rush, professor of Pathology at Chicago Medical College and the Women's Medical College. He became president of the Chicago Pathological Society and first president of the Society of Medical History, besides editing the pathological transactions of the Chicago Medical Society. A number of articles of which Danforth was the author appeared in the *Chicago Medical Journal* in the seventies. Most of them were concerned with microscopy. He urged the daily use of the microscope and listed the qualifications for a really good and serviceable one.

In a letter written to Dr. Hektoen about 1897, Dr. Danforth gives a picture of the conditions of Pathology when he took the Cook County position:

"I had been Pathologist to St. Luke's Hospital for some time, but in that institution the autopsies were very few, and generally made hastily and surreptitiously, and *never* in the presence of the students. Moreover, we had no conveniences for making complete or thorough examinations, and no apparatus for pathological research. Of course all this is now changed.

"As long ago as 1878 there was no general anatomical law, no Demonstrator's Union, or any other means of obtaining, or for the equitable division of, anatomical material; hence every Professor of Anatomy and every Demonstrator became a sort of pirate who went prowling around the dead houses of the various hospitals in search of 'material.' They also had understandings with the Internes and Undertakers as to the delivery of bodies for a 'consideration.' This state of things brought me in frequent collision with anatomical teachers, who did not want the bodies 'posted' before they went to the dissecting room."

In the spring of 1878 there came to Cook County Hospital the first pathologist in the Middle West worthy of the name. Born in Denmark in 1840, he had studied medicine on the Continent in Copenhagen and Vienna, where he served in both the Prusso-Danish and the Franco-Prussian wars. In 1875 he went to Egypt to take over his brother's practice in Alexandria. Later he went to Cairo, where he made an investigation of trachoma in public school children and of a highly fatal epidemic disease of the respiratory organs in horses and mules. Ill health forced him to leave Egypt and in June, 1877, Dr. Christian Fenger accompanied an American major on sick leave to Bloomington, Illinois, eventually locating in Chicago.

Fenger secured his position at Cook County Hospital by buying it with money which a friend had loaned him. At that time $1,000 was the price to the county commissioners, no small sum for those days.

In "Christian Fenger as I Knew Him" L. L. McArthur[6] says, "To one who had sat at the feet of J. A. Allen, Moses Gunn, Hosmer A. Johnson, and Nathan S. Davis would come more sharply the consternation at the radical changes made necessary by the newer pathology, morbid anatomy, and bacterial proofs submitted by Christian Fenger, the newcomer."

During the first two years Fenger was given the inconvenient clinic hour from one to two, so attendance at his classes was slight at first, although the faithful attendants included Drs. McArthur and J. B. Murphy. At the end of that period his familiarity with surgical problems was so evident that other members of the staff left him in charge of their services during vacations. For the next fourteen years he was attending surgeon, during which time he constantly accumulated specimens of every type of surgical pathology. He it was who introduced the antiseptic methods of Lister in operations performed at Cook County Hospital, this in 1878 or 1879.

Fenger became curator of Rush Medical College in 1880, professor of surgery in the College of Physicians and Surgeons in 1884; surgeon-in-chief to Passavant, German and Norwegian

Tabitha hospitals when they were founded; in 1893 he assumed the professorship of surgery in the Chicago Medical College and became surgeon to Mercy Hospital; in 1899 he became professor of surgery at Rush with a surgical service at Presbyterian Hospital.

Before the advent of Fenger, bacteriology was an unknown science. About 1869 occasional articles had appeared on disease germs, septicemia, antiseptic surgery, but the names of Koch, Lister and Pasteur were little mentioned in Chicago medical journals before 1879. Ten years before that Dr. Edmund Andrews acknowledged that the use of carbolic acid was a remarkable addition to surgery, but he advised no one to make a hobby of it. As late as 1883 Dr. N. S. Davis declared before the Illinois State Medical Society that "germ theories" of disease and "germicide remedies" were running too rampant.

One of the first public demonstrations of pathogenic bacteria in Chicago was made by Fenger in 1879 when he gave a demonstration of the bacterial nature of acute endocarditis, the first on this side of the Atlantic. He actually exhibited under the microscope some of the exudate from the heart valves in which were myriads of micrococci.

William T. Belfield, who had recorded Fenger's demonstration, also sent letters to the *Chicago Medical Journal and Examiner* from Vienna in 1882, recounting Koch's discovery of the tubercle bacillus. Upon his return he demonstrated it in Cook County Hospital and to the Chicago Pathological Society, emphasizing the clinical value of examining the sputum for tubercle bacilli. In 1883, Henry Gradle, another young Chicago physician who had worked with Koch abroad, published one of the earliest books in English on the "germ theory of disease."

During the following years Bayard Holmes played a significant part in bacteriology in Chicago. He was largely self-taught; as an intern he set up a bacteriologic laboratory in his bathroom, where he made cultures on gelatin, boiled eggs and coagulated hydrocele fluid of wounds and suture materials. For this he suffered much ridicule on the part of his fellows. His first article was written in conjunction with Christian Fenger and dealt with bacteriologic control of antiseptic methods. In 1888 he published a notable article on secondary mixed infection in typhoid fever.

In the same year diphtheria was recognized as a contagious disease, and the foundations laid for quarantine of patients.

Dr. Theodore A. Edwin Klebs, one of the first to see and describe the diphtheria and typhoid bacilli, was professor of Pathology in Rush Medical College from 1896 to 1900. Preceding that he had served as assistant to Dr. Rudolph Virchow for five year, was professor of General Pathology at the University of Bern for six years, held the chair of his former teacher, Virchow, at the University of Wurzburg, and was then at the University of Prague and the University of Zurich, serving as a teacher of Pathology for twenty-five years.

In 1889, Dr. Nicholas Senn[7] published a review of the current literature on surgical bacteriology, thus bringing us up to the modern era in this branch of medicine. After 1890 new laboratories were organized in the medical schools; laboratory teaching was developed, and laboratory methods were introduced in clinical diagnosis; bacteriology was added to the curriculum and its methods introduced into public health work. Soon bacteriological research was under way.

Interest in the new movements in pathology was fostered by the formation of the West Chicago Medical Society in May, 1878, under the presidency of Norman Bridge. Dr. Lyman read the first paper, his subject being "Fermentation," before an audience of thirty-three. In 1881 the organization changed its name to the Chicago Pathological Society.

Regular monthly meetings were held at Dr. Lyman's home, with an average attendance of 12 to 20 of the 50 or 60 members. These were essentially clinical in character, though the number of pathological and microscopic specimens demonstrated was rather insignificant. Such subjects were discussed as "Tetanus in a Newly-Born Infant," "Two Cases of Myxedema," "The Influence of Mind Over Matter," and "Atmospheric Dust as the Cause of Disease." In the reports of the meetings of this society we find the first records of the scientific work of Christian Fenger. Dr. Edward Holmes reported a case of general miliary tuberculosis with involvement of the choroid, which Dr. Fenger had examined post-mortem.

Gradually meetings were marked by increased interest in purely pathologic subjects, and the membership was strengthened by a number of persons interested in pathology and bacteriology. In the nineties this caused the affiliation with the Chicago Medical Society and the transfer of meeting place to the Loop. From 1894 to 1936 the Society published regular numbers of its Transactions. Since 1936 the Transactions have been printed in the *Archives of Pathology.*

Two other societies of a fleeting character were the Chicago Biological Society, founded in 1882, and the Pathological Section of the Chicago Academy of Sciences, started in 1891. Both passed out of existence after a few sessions.

Under the stimulus of increased interest in medical education, Pathology took on a wider horizon. We may mention but a few of the leaders in the early part of this century.

At Northwestern University Medical School, Dr. Frederick Robert Zeit prepared one of the outstanding museums of pathology in this country. It has been properly and officially dedicated in his honor. He is well known to all Northwestern graduates through his famous course on tumors.

Dr. Maximilian Joseph Herzog did much research work in pathology, both in Chicago and for a few years in Manila and Japan. He was professor and dean of the Department of Pathology in Loyola University.

The dean of all pathologists in Illinois and the Middle West is Dr. Ludvig Hektoen. Professor of Pathology at the College of Physicians and Surgeons for two years and director of the department at Rush Medical College for over 30 years, he still continues active. In his early years in pathology, he worked with Nicholas Senn and Christian Fenger, bringing to fruition their beginning endeavors. His activity is still manifest, since he is editor of the *Archives of Pathology* and of the *Journal of Infectious Diseases,* Executive Director of the National Advisory Cancer Council under the National Institute of Health, and a director of the American Society for the Control of Cancer. In conferring the degree of Doctor of Laws *honoris causa* upon Dr. Hektoen, Western Reserve University cited him as "pioneer pathologist of the Middle Border."

Among Dr. Hektoen's students are Dr. H. G. Wells, head of the Department of Pathology at the University of Chicago, Dr. D. J. Davis, Dean and Head of the Department at the University of Illinois College of Medicine, Dr. James P. Simonds, Director of the Department of Pathology at Northwestern Medical School, the late Dr. Howard T. Richetts, who is so well known for his work on blastomycosis and Rocky Mountain Spotted Fever, and the late Dr. E. R. LeCount, that authority in practical pathology, both clinical and medicolegal.

The history of the medical work of the Cook County Coroner's Office is intimately associated with both Dr. Hektoen, the first Coroner's Physician, and Dr. LeCount, who for many years was chief of the Coroner's Staff of physicians. However, the first Coroner who was a physician, Dr. Ernest Schmidt, connects that office with the "father of pathology," since he had his training under Dr. Rudolph Virchow.

Among those who have given particular attention to the legal side of this branch of medicine is Dr. Oscar Schultz, whose exhibits at the recent World's Fair on the medical examiner's office have given much cause for thought.

In one hundred years Pathology has developed from a nonexistent course in medical schools to one, if not the chief, of the fundamental courses. Many men are devoting their full time to this subject in the medical schools, but a more significant sign of its importance is that the hospitals are installing pathology departments, which in some of our larger Chicago institutions compare favorably in teaching and research with those in medical colleges. All Chicago physicians are familiar with the courses of the late Dr. Richard Jaffe at the Cook County Hospital. He made the results of the autopsy an "indispensable adjunct" in the effective teaching of medicine.

In order to have more autopsies there must be a sympathetic understanding between the physician and the mortician. This is being accomplished in Chicago through joint meetings of both groups, the first of which last month brought out several hundred to witness films on the proper technique in the performance of an autopsy and the embalming of the body.

The Illinois Society of Pathologists was organized this year and, while it may be coincidental, it was found that there are approximately one hundred qualified pathologists in this state who meet the training requirements of the

American Board of Pathology. One hundred years to produce one hundred pathologists, who are serving the public in private laboratories, coroner's office, hospitals, cancer institutes, research institutions and medical colleges.

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A CENTURY'S DEVELOPMENT OF PUBLIC WELFARE WORK AND PROJECTS (1840—1940)

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ELGIN, ILLINOIS

The largest governmental department of the State of Illinois, the Department of Public Welfare, organized in 1917, indicates the interest of the people in mental and physical health. Prior to the founding of the first state hospital at Jacksonville in 1847, there was no material evidence of general community interest in the mental health of Illinois residents. When they became insane they were kept at home, often in basements or outbuildings, or lodged in county jails.

Early in this period of awakening civic health-consciousness an outstanding medical unit was founded in Chicago for the treatment of indigent eye and ear patients. The Illinois Eye and Ear Infirmary, of which the state assumed charge in 1870, has probably treated more individual patients than any other institution of its kind in the United States. The vast majority of these are dispensary cases—101,808 visits in 1939, during which period 5,505 patients were hospitalized. This hospital is also an active teaching institution, training 24 residents every two years.

The development of state asylums, as they were called, proceeded steadily but irregularly, and their popuation grew correspondingy from one person at Jacksonville to the present day, population of over 30,000 and from one small institution to the present nine, each located in its district of a number of counties. In and about Chicago there are now four large state hospitals caring for approximately 12,000 residents of Cook County, in addition to many patients from nearby counties.

Institutional care and treatment for the feeble-minded was first furnished at the Institution for Idiots and Imbeciles, established at Jacksonville in 1866 and removed to Lincoln in 1877. The Dixon State Hospital was established in 1913 and together these "schools and colonies" care for 8,270 patients. The treatment of the feeble-minded is essentially a medical problem that need not be discussed here in view of the fact that it has principally to do with recreational and vocational education, with some academic work for high-grade morons. Very regrettable from the viewpoint of treatment is the fact that these fine institutions are mostly utilized by the public for the commitment of idiots, imbeciles and delinquent morons. There are thousands of children in this state with an intelligence rating of 50 to 70 per cent. who should be trained in these good schools to do the socially useful tasks which they are capable of learning, after which they should be returned to their homes to make their contribution to the community with a self-respect not possible without such training.

All institutions operated separately under local boards of medical and financial management until, in 1909, a central State Board of Administration was set up by legislative enactment to coordinate policies and purchases. The medical member of this board was designated as the state alienist, a position held successively by Doctors James A. Greene, Frank P. Norbury and George Zeller, all now dead. The board of administration, though it existed only eight years as such, achieved several outstanding medical tasks.

Thus mechanical restraint was abolished in its cruder manifestations, such as locking patients in their rooms at night and using barbarous leather contraptions. There is no doubt that this achievement has contributed largely through the years to the health and happiness of state hospital patients. Today restraint is used only in medical and surgical

cases when absolutely necessary, in the form of wrist or ankle bandages.

Probably the most humane act of this body was to secure the passage of legislation in 1912 to remove all mental cases from almshouse care, thus doing away with old Dunning of unsavory memory and rebuilding much of the institution under its present name of the Chicago State Hospital.

The Psychopathic Institute, established on a modest scale at Kankakee about the same time, opened the way to research into the cause and treatment of mental disorders and was the forerunner of the neuropsychiatric unit of the Research and Educational Hospitals in Chicago, to be occupied this year. The passage of a state civil service bill in 1905 gave some assurance that qualified employees might continue politically unmolested in their work.

In 1917 the present Department of Public Welfare was organized, retaining the state alienist and adding a state criminologist. Soon the Juvenile Psychopathic Institute of Chicago —founded in 1909 by Dr. Healy and Mrs. Dummer as a private charity—was taken over as a state project, under the direction of Dr. Herman Adler as state criminologist and was renamed in 1920 the Illinois Institute for Juvenile Research, its major service becoming that of a community clinic, serving children referred by the Juvenile Court, social agencies, schools and relatives. The Psychopathic Institute at the same time was placed under the direction of the alienist, Dr. H. Douglas Singer. During succeeding years the department has developed an extensive health program, involving many physical structures of considerable magnitude principally concerned with mental health and with the erection of a medical center in Chicago.

Soon after the organization of the welfare department it became evident to the director, Mr. Charles T. Thorne, and to Dr. David Kinley, president of the state university, that the university medical school must have a hospital of its own. Rapidly plans developed for the Research and Educational Hospital in Chicago, now for many years an accomplished fact, and near neighbor to Cook County Hospital. The building and maintenance of this hospital group has been carried on under state management, while the teaching and medical staff is controlled by the university authorities, under an agreement which appears to have operated satisfactorily to the present time. The general hospital contains 402 beds and cribs and in 1939 gave bed care to 5,614 cases. The dispensary upon the ground floor, almost an institution in itself, registered 13,011 new patients last year, and recorded a total of 174,969 visits.

The most notable of the additions to this great institution is the Neuropsychiatric Institute, sponsored by Director A. L. Bowen, and now practically completed, with a capacity of 100 beds for psychiatric and 50 for neurological cases, in addition to suitable research laboratories and amphitheatres for teaching purposes. These facilities will be available to all medical schools of Chicago. Since mental patients occupy more beds in the State of Illinois than all other patients combined, it is evident that every effort must be made to search for causes as well as treatments for mental diseases, in order to lessen in time the number of people in state hospitals.

In 1933, legislative enactment reclassified all prisoners in Illinois and provided for a preliminary physical, social and mental diagnosis for each newly convicted person, thus placing Illinois in the forefront of scientific penal management in the opinion of courts, penologists, and criminologists who recognize the need of applying mental medicine to criminology.

Diagnostic depots were established at Joliet and Menard where, in the first twenty-one days of a prisoner's term of imprisonment, he is carefully studied by a corps of competent examiners under the direction of the state criminologist. This classification board, composed of a psychiatrist, a psychologist, an assistant physician and a psychiatric social worker or sociologist, then recommends the proper placement of the prisoner in the penitentiary system, his group placement and the plan of treatment to be instituted. This medical approach to the problem of prisoner treatment gives promise of good results in the rehabilitation of improvable criminals.

It is perhaps not generally known that the Welfare department carries on two sets of medical clinics of major importance. On July 1, 1937 the Division for Handicapped Children was established, and with state and federal

funds has to date held 168 clinics in various places, principally downstate. Recent surveys have revealed that there are approximately 32,000 crippled children in Illinois. This division aims at welfare work in general as well as treatment for the afflicted. Those who can afford private treatment are excluded. At the Illinois Research and Educational Hospitals alone 51,000 hospital-days were furnished during treatment and convalescence. Artificial respirators (iron lungs) were installed in 1938 in seven state hospitals for the treatment of infantile paralysis in the surrounding communities.

The Governor Horner Trachoma Clinics completed their fifth year on June 16, 1939, and report that this serious disease, prevalent for years in southern Illinois, has begun to show signs of diminishing. Free bus service, provided by the department, has carried patients from 114 towns and villages to and from 5 clinical centers. Over 3,500 cases have been treated.

Many years ago Illinois officially recognized its medical as well as socio-economic responsibility, in connection with mental disease, by designating its institutions for mental patients as state hospitals; but this change of name did not change their character overnight. The climb upward toward actual hospital status has been a long and arduous one and is not complete. It can be fairly said, however, that everything possible has been done for many years, and especially in the last ten, to equip and man our state hospitals for the work they have to do, in so far as available funds permit. Without complaint, it may be remarked that the average per capita cost of Illinois state hospitals is less than 70 cents a day, while many eastern institutions spend over a dollar a day. Illinois, however, pays as it goes, has not issued bonds for the support of its patients, nor to carry on the immense building program of recent years. A hospital for mental patients is not simply erected in a given year, but is remodeled and added to indefinitely. Thus since 1933, in order to provide decent housing conditions and to improve diagnostic and treatment facilities, $14,442,000 has been spent and more than one hundred new buildings have been erected at the nine state hospitals; including nine structures for the special care of tuberculous patients, and six fine diagnostic centers for the reception of new admissions. The inventory of buildings, land and equipment for our mental hospitals alone represents $36,845,000—a far cry from those days less than a hundred years ago when Dorothea Dix traveled 30,000 miles through the East and Middle West to champion the rights of the insane to medical care and treatment.

Institutional mental medicine in Illinois represents at present the care and medical management not merely of 30,000 patients a year —the average population in 1939—but of many thousands more that are seldom taken into consideration. Thus, at the Elgin State Hospital in 1939, the average population was 4,660, but owing to 2,007 admissions during the year, 6,667 patients received care and treatment. Not all patients are committed by court action. Many come of their own accord. At the above mentioned hospital 25 per cent of the admissions last year were voluntary. In the increase of the hospital population and of voluntary admissions, there is evidence of increasing public confidence in state hospital treatment.

A Superintendent of the Division of Mental Hospitals has recently been appointed to assist in the supervision and coordination of the medical work of the various state hospitals, and a Supervisor of In-training Service has been appointed to oversee the important work of training the attendants and nurses who are already in the state service. Clinical directors and pathologists are being appointed as rapidly as suitable men can be found, and the percentage of autopsies is constantly increasing.

In a hospital with an active receiving service, approximately one-fourth of the entire population is under some form of active treatment for physical or mental illness, while the remainder—the ambulatory infirm of all descriptions and psychotic patients for whom there is slight hope of recovery—require not merely custodial care, but continued and emergency treatment, and constant psychiatric observation. It is, perhaps, not generally understood that a multitude of mental patients who never actually recover may for considerable periods of time improve sufficiently to make a good hospital adjustment, or even to return to their homes.

Such partial remissions occur notably in cases of paresis, cerebral arteriosclerosis, feeble-mindedness with psychosis, and in a large number of schizophrenics.

It is regrettable that the laity, as well as the medical profession in general, can have no adequate idea of what the daily medical program of an active state hospital actually represents. Such a program includes anticipated and emergency operations, diagnostic physical work-ups, psychiatric examinations, sundry laboratory tests, x-ray examinations, psychological determinations of intelligence and of the improvement of patients, the work of the dental office and dispensary clinics, staff conferences for the consideration of diagnosis and treatment and of questions of parole, the daily administration of insulin and metrazol shock therapy, the carrying on of employee-educational work and occupational, hydrotherapy and recreational treatment programs, etc. And back of all these activities looms the constant making of records of the behavior of patients, their physical status, the treatment of their physical and mental illnesses, etc.

With all this to be done, and more that can only be read between the lines, it redounds to the credit of many a physician in the state hospital service that he is still eager to carry on investigative work in part on his own time and, when possible, to seek junior faculty positions in medical schools. The staff physician of a progressive state hospital nowadays, far from being a follower of routine, is an active professional man.

A CENTENNIAL SUMMARY OF MEDICINE

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CHICAGO

The Illinois State Medical Society was formally organized in 1840. The State itself had been admitted to the Union 22 years before, but in this year of Grace had only 476,183 inhabitants of which 4,470 were in the City of Chicago.

The population was composed of a heterogeneous group of Indians, hunters, half-breeds, trappers, Frenchmen and slave catchers as well as adventurers from the east who flowed in continually to secure homesteads and cheap land or to embark in various business enterprises. Among the latter "land fever" was the most prevalent disorder and the frenetic state was so acute that every speculation was regarded as worthless which did not double in value over night.

The prairies stretching out south and west from Chicago were low and swampy and, though relatively dry in summer, yet were often flooded by rain for months at a time. When this happened rivers overflowed, the creeks were swollen to rivers, no bridges existed, and all water courses had to be forded at the risk of life, or at least of long detention in the firm grip of the alluvial mire at the bottom.

Even at the most favorable seasons however the prairies were spotted with innumerable ponds, quagmires and mudholes which made travel so slow, difficult and uncomfortable that it took from two to three days to go from Chicago to Peoria. On the other hand those vast spongy meadows were carpeted with myriads of wild flowers and throughout the congenial months teemed with quail, prairie chickens and deer with an occasional buffalo for good measure.

The rivers and lakes swarmed with fish while thousands of wild ducks, geese and swans floated in ease and comparative safety on the beautiful surfaces which glinted in the sun like a myriad of small mirrors.

Dr. J. Murphy of Peoria (1848) however, testified that these same boggy meadows, abounding with flowers and game were also saturated with malaria. At all events physical disorders of various kinds were rampant. Throughout the year cases of typhus, typhoid, scarlet and yellow fevers, measles, malaria, cholera, erysipelas, smallpox, cholera infantum, pneumonia and cerebrospinal meningitis were always somewhere present while epidemics of one or more of them often swept over the State, leaving a devastating mortality (30%+) to mark the passage of the pest.

Vaccination, of course, would have prevented the smallpox if the people had not been unconvinced and fearful—but in no instance were any sanitary measures observed. The doctors travelled on horseback with saddle-bags, or by gig or buggy, carrying a limited supply of fever medicine, sulphur and molasses, obstetric forceps and a case of instruments for emergencies. The bag might also by chance include a monaural stethoscope.

In that age of trail breaking and frontier life, trained physicians were scarce. There was no medical practice act, and anyone who felt the urge or ambition to treat the sick became at once a doctor with full powers to act. In consequence, the country was infested with cultists, quacks, charlatans, empirics, herb doctors and unskilled dogmatists who had salesmanship rather than wisdom and often knew less than the helpless people who received their officious attentions. There was no God in Israel.

Old theories, new illusions, hunches, and imperfectly interpreted observations laid heavily upon medical practice everywhere. During epidemics the doctors were overworked and often slept in their saddles where they passed day after day in making the fifty or sixty calls per diem in localities which were usually far apart.

Slowly the conditions improved. The formation of the State Society was resented at first by jealous outsiders who regarded it as a clique. Other medical organizations appeared. Rush Medical College was chartered 1837, opened 1843. The first city medical society was assembled in Peoria, and the American Medical Association, the same year. In 1850 the Chicago Medical Society was established, and in 1859, the Chicago Medical College, which was the first school in the United States to require a graded curriculum, while at long last (1877), a medical practice act was secured by members of the State Society. This again was more comprehensively cared for by the Act of 1923, also obtained through persistent efforts of the Society.

Such were the conditions in Illinois which prepared the soil for seed-time and harvest of the marvelous advance in general and medical science which was about to envelop mankind during the century just closed.

Since long before the Christian era, anatomy had been patiently examined by doctors, medically minded philosophers, painters, priests, adventurers, and curiosity seekers throughout the world, and the main divisions of the human body with its congeries of organs were fairly well understood and charted. Physiology, pathology, and chemistry were sturdy infants of recent birth scientifically but growing slowly toward an active adolescence. The art of medicine was blindly feeling its way out of an Egyptian darkness of ignorance and superstition. Lights appeared here and there, yes, but it was difficult to learn whether they were the lights of truth or the will-o-the-wisps of error.

The scientific practice of medicine really beban with Magendie (1787-1855) who was a pioneer in the experimental approach. Louis (1787-1872), and Johannes Müller (1801-1858) followed closely. Müller was one of the greatest leaders in the upgrowth of physiology, and probably the actual founder of what was ultimately scientific medicine. Together with these was Claude Bernard (1831-37), Magendie's assistant, who must be considered with Laennec, and the group culminates in Virchow (1821-1902), the sun of this galaxy who still throws his fervent beams upon the present age.

It was Louis who took a strong stand in favor of facts and figures as against the sterile theorizing of the past and made his mark in tuberculosis and in typhoid which he named. He was the first to use a watch in timing the pulse. The statistical habit which he developed was of great value in aiding Erb and Fournier to test the value of hydrotherapy in typhoid and later, the antitoxin in diphtheria, operative intervention in appendicitis, and in experimentation with new drugs such as the 606 of Ehrlich. His pupils in America, Holmes, Gerhard, the Shattucks, Jacksons and others followed his method and spread his reputation.

Laennec invented the stethoscope (1819) which was at first only a cylinder of paper, then a wooden affair and later converted into the binaural instrument of today by Osler (1885). Laennec's treatise on percussion, (Auenbrugger 1702-1809) and auscultation (1826) gave him place among the greatest clinicians of all ages, and the book still remains the foundation stone of modern knowledge of chest diseases and their diagnosis. He was also known as a most successful teacher on tuberculosis and as the forefather of clinical medicine.

Claude Bernard began his work with a study of the gastric juice (1843) but devoted himself largely to the functions of the nervous system to which Bell, Magendie, Hall and Müller had so actively contributed. On the possibility that the vagus might influence the hepatic secretion, he punctured the floor of the fourth ventricle and produced an artificial diabetes, or experimental glycosuria, in 1849, and for this work he is regarded as another of the pioneers in experimental medicine.

This sound basis needed only a potent impetus to enable medicine to break out into a salutary freedom of thought. Fortunately such a stimulus was already in course of gestation, and in 1842 all minds were tensed by Darwin's preliminary statement on "Natural Selection" which was more abundantly fortified by the "Origin of the Species" (1859).

"Darwinism" set the intellectual cosmos afire. The smug complacency of mid-Victorian Europe was stirred out of its slumbers, the striving Jacksonian democracy of America which was only concerned about personal health when epidemics appeared, was compelled also to wonder what new thought was disturbing the political atmosphere. Religionists of all sects were foaming with rage and animosity against the implied criticism of a Divine creation while scientists became deeply thoughtful over the profound significance of the theory, if it could be demonstrated.

Every civilized country was affected. The Darwinian postulate not only compelled a vigorous mental activity but provoked acrimonious discussions which demanded study and revisional examinations of all the basic principles of accepted scholarship. The world of mind was supremely aroused, the hierarchy of medicine could not remain static, and the romantic story of its scientific development was inaugurated.

The epoch of anatomy had been of long duration and the existing knowledge of the human body was grossly satisfactory. Surgery also to a limited degree was imperative but the mortality was frightful to recall now. Operative intervention was practically restricted of necessity to the limbs and surfaces of the body while the surgeons themselves were distinguished according to the speed and dexterity of their procedures. It is related that Cheselden did a lithotomy in less than a minute, that Fergusson, the founder of conservative surgery, was so speedy that spectators feared to glance aside lest they miss the whole operation, and Pirogoff challenged comparison with a sleight-of-hand artist, so rapid was he in the use of the knife. The obligation for haste was unavoidable since the patient could not undergo a prolonged maneuver lest he die of shock.

Relief however from this unfortunate state of affairs was now impending. Nitrous oxide, discovered by Sir Humphry Davy (1799) was presented to the profession as an anesthetic (Wells 1849) but met with a long delay. Ether had been used for the same purpose by Long (1842), and demonstrated by Morton (1846). Chloroform was brought out by Simpson (1847), and Luckhardt's ethelene (1923). Several others appeared later like avertine, vinethene, cyclopropane etc. The discovery of cocaine (Anrep 1879-84) and its derivatives extended the technic to circumscribed localities, and to the superficies of the body. Anesthesia, named by Holmes in 1846, gained rapid approval and safety with usage, and that feature of Heaven predicted by the Evangelist in the words, "neither shall there be any more pain," was assured. When an anesthetic was first employed for a major operation in England, Robert Liston, the surgeon, working with his usual dexterity, did a thigh amputation in twenty-five seconds.

The battle however had but just begun. Though an operation could be carried through without pain the mortality was still alarming. The appearance of a moist gray slough surrounded by an angry blush portended the onset of hospital gangrene which few, if any, of our modern surgeons have ever seen. In the Crimean war 10,006 out of 13,172 amputations were fatal from infection of some kind.

Simpson found the conditions so bad that he made a survey and learned that out of 2,089 amputations in the hospitals, 855 had ended fatally. In every instance the larger the hospital, the higher the mortality. Most surgeons were content with losing from a third to a half of their cases, a result which occurred frequently either from the incidence of secondary hemorrhage, tetanus, erysipelas, pyemia, septicemia, or of gangrene, one or more of which were never absent from the wards, and often epidemic.

Anesthesia was doing its share but the histologists and pathologists were not idle in their own sphere. Schwann (1837) was formulating his "cell theory," and meanwhile reporting the discovery of the axis-cylinder of nerves, the organic nature of yeast, the nucleated cells of the notochord and, with Schleiden, the nuclei of plant cells.

In 1839, he states, "there exists one general principle for the formation of all organic products and this principle is the development of cells, all of which may be comprised under the term "cell theory." Cohn reinforced this work

through the discovery of the similarity and identity between plant and animal protoplasm.

Virchow (1847) established his *Archives of Pathological Anatomy and Physiology for Clinical Medicine* upon the cell theory. Cellular pathology in his opinion was the recognition of the fact that the cell is the ultimate element in which there is any manifestation of life. He declared that every morbid structure consists of cells derived as progeny from pre-existing cells, just as animals spring from animals and plants from plants.

He established the law that in the whole series of living things, whether plant or animal, or essential constituent thereof, *continuous* development prevails. Thus he affirmed the truth of Darwinism which he would not openly accept. "There are," he said, "no specific cells of disease but only modifications of physiologic types."

Particular difficulty had arisen at that time in deciding which parts of the body are sources of action—which active, which passive. The chief point in this application of histology to pathology is to recognize the cell as the ultimate morphologic element in which life is manifested and "we cannot, must not, transfer the seat of real action to any point beyond the cell." He taught that medicine as an allied science must rest upon the firm foundation of the natural sciences.

His work is too vast even to be summarized here. He was the central figure in the Berlin faculty and, until the day of his death (1902) the potent ferment of his brain autocratically ruled the domain of medicine to its signal advantage.

The pathology of Morgagni (1682-1781) was the pathology of organs, that of Bichat (1771-1802), the pathology of tissues, but Virchow focussed the attention on the elements that form the tissues. Morgagni thought in terms of anatomy, Bichat in terms of physiology, Laennec, and later Osler, as clinicians, while Virchow introduced pathologic thinking into medicine and his dictum, "omnis cellula e cellula," is still steadfastly true.

The bacteriologists were also striving diligently for light. The spontaneous generation of germs had been generally accepted by the faculty of medicine until it was overthrown by the experiments of Pasteur. This genius first came into notice when, through his masterly analysis of the conversion of racemic acid into dextro-tartaric and laevo-tartaric acids, he laid the foundation for stereo-chemistry in 1848. He discovered (1856-62) that fermentation and changes in the nature of wines and beers, were due, like the diseases of his silk worms, to micro-organisms.

These studies in connection with the bacteriologic work of others, prepared the way for his research on anthrax. Comprehension of the origin and transmission of plagues, fevers and pestilences was veiled in a pall of ignorance. Fevers were catching, epidemics spread by contact, and other diseases ordained by God but now Pasteur lifts the shroud.

The bacillus anthracis had been identified by Delafond (1838) but Pasteur demonstrated that this germ was the etiologic factor in the disease. This was only the beginning. He discovered the bacillus of malignant edema in 1877 as well as the pneumococcus and staphylococcus. In 1880 he isolated the streptococcus pyogenes.

Pasteur next investigated chicken cholera (1880) which Toussaint had proven was due to infection by the bacillus avi-septicus. In this study he injected chickens with weakened doses of a culture medium—a broth of chicken gristle—and found that such chickens either did not take the disease or took it only mildly.

Edward Jenner's production of artificial immunity in smallpox had been regarded up to this time as an isolated phenomenon which was not understood although the principle had been duly set forth in Jenner's thesis. Was not this discovery of Pasteur worthy of a place beside the vaccination of Jenner which he, Pasteur, had long been pondering?

He followed this feat with the preventive treatment of anthrax by a vaccine (1882) and by yet another epochal success soon thereafter in revealing the cause, prevention, and cure of rabies, his star rose high in the Heaven of science. Jenner and Pasteur therefore must be looked upon as the founders of preventive medicine.

It remained now for Joseph Lister to make practical application of these bacteriologic advances while acknowledging his obligations to Pasteur. In the forefront of this contest he strove bravely. He was received with incredulity and derision though he showed clearly that his thesis was correct. He proved that infected wounds in surgery were due to germs, that elimi-

nation of these organisms would result in a normal healing process and used a preparation of carbolic acid in his operations. From the day of Lister's entry as professor of surgery in King's College, London, "no rise of temperature occurred after his incision was made, nor ever a blush upon a wound." Again the demonstration was complete. The new technic was then accepted as true, and aseptic surgery spread over the world like a prairie fire. Two serious handicaps had been removed. Neither pain nor speedy operations were any longer necessary but accurate diagnosis, cool judgment, technical training, and a surgical conscience were still most essential.

Hitherto the cavities of the human anatomy had been free from invasion and justly so, but from this time on the body was opened tentatively in selected cases, tissues, glands or other organs repaired, removed in part or otherwise, and the wound closed with safety and recovery. The operators however worked with great caution.

Extirpation of adenoids (1868) was followed by nephrectomy (Simon 1869) vaginal ovariotomy (Thomas 1870), renal calculus (Ingals 1873) laceration of cervix (Emmet 1874) cesarean section (Porro 1876), extirpation of cancerous uterus (Freund 1878), nephropexy (Hahn 1881) Sänger cesarean section (1882), gastroenterostomy (W o e l f e r 1884), hysterorrhaphy (Kelly 1887), and so on until every section of the body had been advantageously entered and corrected.

This broad outlet had developed from the splendid achievements of zealous investigators and, Morton, Koch, Pasteur and Lister were the men at the forefront of the experimental campaign. Pasteur especially had revealed indeed many secrets of life, and modern medicine and surgery must reverently bow the head in honor of these great men who were responsible for the marvelous feats which are exhibited daily by the profession in 1940. However in signalizing these men it must not be forgotten that they built upon foundations laid by hundreds of obscure but enthusiastic laborers in the field of science who have left but few, or no signs whatsoever of their toil. Thus as "the iniquity of oblivion blindly scattereth her poppy," so it was with the m u l t i t u d e who contributed their moieties to the paeans of the century.

Meanwhile the lying-in woman had been forever a step child to the medical profession. Though White (1772) had warned the faculty of the contagiousness of puerperal fever, it remained for O. W. Holmes (1842-3) to call forcible attention to these pathogenic emergencies together with a description of the ease and method by which the infection was conveyed. He fortified his thesis by clinical reports on which he based his accusation, and the admonitions, which he gave at the same time for the avoidance of the disaster are thoroughly sound and would have prevented many fatalities, if they had been accepted. He summarized his opinion in the stark statement that "puerperal fever is a private pestilence."

Holmes was virulently opposed by Hodge and Meigs, the best known obstetricians of the day. The latter declared that "he preferred to believe that the fever was an act of God which he could understand rather than the work of micro-organisms of which he could form no conception." The attack was so bitter and venomous that the cause was temporarily lost.

Semmelweiss (1818-1865) observed that the doctors in the Viennese hospital had a mortality from fever of 12% while the midwives had 3% only. Inquiry convinced him that the difference in mortality arose from the fact that the doctors and students went directly from the postmortems to labor cases without cleansing their hands. He therefore inaugurated the system of hand washing and nail cleaning, with the subsequent use of chlorine and a solution of chloride of lime. From that date (1848) the mortality from puerperal fever dropped to 1.27%.

Notwithstanding this plain demonstration, the profession was unwilling to accept the light of truth or change its methods. As with Lister, the men merely railed at the new idea and reviled Semmelweiss as a fanatic. They could not escape from their restrictive prepossessions. Semmelweiss was a good man struggling against adversity and the end was unhappy. He did not succeed in his appeal nor in convincing his opponents, and brooding over his failure brought on an insanity which ended in death. The device of our profession had again been realized, "aliis serviens ipse consumor."

Since 1880, however, medical men have universally accepted the fact that puerperal fever is a wound infection, definitely due to one, or

more, of the dozens of strains of bacteria which have been brought into contact with the bruised and lacerated genitalia from without. With conversion to this belief and the rigorous application of asepsis in confinement cases the better class of hospitals have no unexplainable elevations of post partum temperatures and no puerperal fever arising de novo.

Happily, the goddess Fortuna still smiled upon the expansion of medicine, and a new and priceless gift was dropped into the lap of the profession (1895) by Roentgen's discovery of the x-ray. The ray was accepted popularly but looked upon with surprise and disbelief by our skeptical brethren. How could one see through or around an opaque body which baffled the eye? Pictures in profusion were displayed by the public press and in medical journals which demonstrated the remarkable character of the new ray. Flesh was transparent but the bones were shadows. Roentgen's official report was presented and the clamor ceased.

The fluoroscope was improved by Edison and became extremely valuable in the examination of moving objects. The necessity for using glass plates made the ray somewhat slower in gaining appropriate recognition, but with the change to celluloid films acceptance was quickly obtained. At first, too, the operator of the instrument was exposed to serious injury, or even danger to life, from ignorance of the unknown powers which the ray possessed. After the earlier experimental stages, however, these dangers were eliminated.

In spite of mistakes and errors the work progressed. Where only bones and foreign bodies had been revealed, the place which the new science was destined to assume in medicine and surgery began to appear. The usage grew daily and the marvelous powers of the ray confirmed or destroyed diagnoses already made and disclosed others which were uncertain or impossible without its aid.

The various systems and organs of the body were now routinely and conscientiously explored by the ray and normal conditions revealed and abnormalities exposed. The laboratory became the ever-present help to the surgeon and extremely useful in other specialties as a valuable therapeutic aid. In the local development of Roentgenography, Pusey and Senn exercised a continous and enthusiastic influence.

The realization of the great importance of the new ray stimulated other investigations on light which resulted in the discovery of the Finson light (1895), the mercury vapor lamp (Arons, 1896), of radium by the Curies (1898), the quartz lamp (Hewitt, 1901), ultra violet light (1903) and others.

Throughout this period the interest in collateral medical affairs constantly kept pace with the increasing enthusiasm of the profession. Colleges of medicine arose all over the country, but many of them were substandard and fell by the wayside when the American Medical Association and the American College of Surgeons insisted on changes which would give them higher ratings. However, many schools did also provide for the entrance of women on the same terms as men.

Hospitals were enlarged and new ones erected. Local, state and national societies had increased attendance and heightened interests which were both instructive and stimulating. Specialties were fostered in the various fields, group medicine sprang up, the Red Cross movement began (1864), and the training of women for a nursing career became general. Faraday and Maxwell worked out the whole theory of electricity and electro-magnetism (1859), Bunsen's spectrum analysis (1859), and Mendel's law reported (1865), lost and recovered (1900). In 1893 Freud presented his theories on psychoanalysis, and psychiatry was born as an efficient aid to neurology. A world-wide campaign against cancer began about 1930.

Laboratories became increasingly necessary and courses in higher chemistry, pathology, were added to curriculums, and x-ray laboratories placed in hospitals and developed elsewhere for commercial reasons and general assistance to medical men. Bacteriology, founded by Pasteur and Koch, had rapidly become a thoroughly organized technology of immense practical value, and two of its phases, personal and environmental bacteriology, are naturally of extreme significance in sanitation. In these numerous innovations one beholds the mystery of medicine definitely transmuted into the magic certitude of science.

From this all too brief account of the rise of modern surgery and its elaborate sequelae our attention must turn to a review of the changes which occurred in the kindred branch of internal

medicine as a consequence of that same Darwinian upheaval. The zealous outburst of energy, thought and experimentation had naturally extended to every department of medical art but in the special field of non-operative work, the industry of the old masters must again be recalled. Magendie, Louis, Auenbrugger, Laennec, Muller, Bernard, and the great Virchow were strongly in evidence here and to these also must be added the name of Jenner, for, while diagnosis became a refined art under Auenbrugger, Louis and Laennec, and though scientific surgery marked the 19th century, Jenner was the unconscious apostle of preventive medicine which distinguished the latter part of the 19th century and waxed rather than waned with the dawn of the twentieth.

It must be remembered that Jenner's "Inquiry" (1798) on vaccination was in reality an inaugural thesis on immunology. The fact that vaccination was effective, that smallpox did not attack a person so treated, or occurred, if at all, in a mild form, either at home or in the armies which were formerly devastated by the pest, made strong friends for inoculation.

Pasteur's illuminating experiments with chicken cholera was the next step and the success of inoculation was assured. The hypodermic syringe had been introduced in Europe by Rynd (1845), and to America by Barker (1856). This implement greatly simplified the technic of immunization. The pocket clinical thermometer was brought out by Allbut in 1868.

During this period, in full operation were the chemical and bacteriological examinations of foods, air, soil, drugs, water and its chlorination, disposal of sewage, cremation, hygiene, of occupation and dwellings, medical inspection of school children and factories, settlement work, slum clearance, blood tests for venereal disease, regulation of marriage, studies in alcohol, widespread employment of open air treatment of tuberculosis (Trudeau, 1864), and on down to sanitary towels, drinking cups and many similar precautionary measures.

Meanwhile the stage was being set for another dramatic event of vital importance. This time in England, where Sir Wm. H. Perkins (1838-1907) was quietly working out what was later known as "Perkins' purple," or mauve. This was the first of the aniline dyes (1865), but its production revealed the whole realm of constructive chemistry and synthetic pharmacy. This discovery was a conjurer's hat out of which anything could be drawn, and chemotherapy came forth with a full purveyance.

The theory of the open carbon chain in chemistry and the closed benzene ring had been stated in the same year by Kekulé (1865). The astonishing advantages of this new outlet were first developed by J. van Hoff and Le Bel and were brilliantly applied by Hoppe-Seyler in the structural theory of Chlorophyl and to the "side-chain theory" of Ehrlich (1897). By this fortunate gateway in chemistry, it was not only possible to produce the 606 (Salvarsan) of Ehrlich, but Wassermann declared that without its aid his reaction (1906) could not have succeeded.

When the real significance of these discoveries was understood by the Magi, the scientific world at once became a melee of experimentation. Thousands of new dyes were developed for commercial use and inumerable additions to pharmacology, the majority of which have a more or less definite place in therapeutics. One of the recent accessions, and, from a medical standpoint, one of the noblest Romans of them all, was sulphanilimide (Domagk, Nobel Prize, 1835), the conqueror of the barbarian horde of the cocci and often an active enemy of the bacillus coli. Soon afterward a sister drug, sulphapyridine (1938), was brought out which was particularly effective in pneumonia, either with or without the serum treatment, which also came forward at nearly the same time.

The microscopists excelled themselves in the revelation of new bacteria by the use of the aniline dyes. Weigert (1845-1904) popularized the stains (1871-75), Koch published his method of fixing and dyeing bacterial films on the cover-glass (1877), his memoir on the etiology of traumatic infections (1878), pure cultures of microorganisms on gelatin (1881), steam sterilization, the discovery of the tubercle bacillus by special culture and staining methods (1881-82), together with a statement of the "Koch Postulates."

"That a particular dye should have an affinity for the tubercle bacillus, a hitherto unknown and unsuspected organism; that Koch had the imagination to devise the necessary combination of stains, the intelligence to realize the significance of the discovery and the genius which enabled

him to cultivate the minute rods, shorter in diameter than a blood corpuscle, is one of the miracles of science." (Cushing)

Although Koch was opposed by many of his embattled colleagues in his own and other countries, the younger generation traveled everywhere with stained fingers. The staining of slides was the standard test for tuberculosis together with the injection of guinea pigs and tuberculin until they were gradually displaced as a routine by the more simply used x-ray.

"Koch's Postulates," determine that the specificity of a micro-organism is not demonstrated without the conditions that: 1. The organism is present and discoverable in every case of the disease, 2. that it may be grown in a pure culture, 3. that inoculation from such culture must reproduce the disease in a susceptible animal, 4. that it must be re-obtained from that animal and regrown in a pure culture. Thus a universal law is laid down to control absolutely the necessitous relation between bacteria and disease.

Other men were not only equally busy and equally enthusiastic but eager to emulate the triumphs of Koch. New organisms were found by hundreds. Eberth discovered the bacillus of typhoid (1880), and Widal his reaction (1895) while immunization against typhoid was reported by Pfeifer and Kolle, with Edward White (1896). The bacillus of tetanus by Nicolaier and Kitasato (1884), and immunity to it and to diphtheria by v. Behring and Kitasato in 1880. The application of these discoveries to practice was followed at once by a reduction of 98% in the mortality. Metchnikoff (1884) reported the protective power of the phagocytes. Schaudinn found the spirocheta pallida (1905). Scarlatina was revealed as a streptococcal infection of the throat by the Dicks (1923), and immunization for it (1924). Pneumonia was broken down into 33 types according to the variety of germ present and by treatment with sera or sulphapyridine or both, the mortality has been greatly reduced. The use of maggots in the cure of septic wounds (World War) recalls the story of the Holy Saint who thought he was acquiring future merit by restoring to his festering sore, the maggots accidentally fallen therefrom. Thus medical practice continually sought new opportunities and through the wide spread evolution of science the Alchemist's "sleeve of Hippocrates" has become a broad carpet for modern medicine.

This epoch was dominated by bacteriology and chemotherapy. However, it will be noted that a fundamental revelation in one of the sciences is often followed by an indefinite series of associated or contributing factors, then the process flowers in a new system of great value.

The theory of immunity is based on an expectation of securing, by injection of an attenuated form of the causative organism, be it dead bacteria, an antitoxin as in diphtheria, or by vaccination as in smallpox, a distinct change in the living organism whereby it attains a resistance to a certain disease. The body in such cases becomes artificially allergic to attack by that germ or virus of disease. Jenner's monograph (1798) clearly explains this anaphylaxis, or allergy, but it took more than a century of study on immunity before there finally evolved a knowledge of allergy (Pirquet & Schick, 1803-6) which in itself disclosed a curious hypersensitiveness to various substances such as pollen in hay fever, food and drug idiosyncrasies which produce urticaria, angioneurotic edema and anaphylactic asthma either natural or acquired. It resembles in most cases the anaphylaxis of animals. This oversensitiveness is per se an abnormality, a disease which requires repressive treatment and desensitization and thus arose a growing group of specialists in the newborn doctrine of Allergy.

Earlier in the paper considerable stress was laid upon the "Cellular Pathology" of Virchow which may have seemed more than adequate for this review but it had a distinct purpose which will now appear.

In those paragraphs Virchow emphasizes the fact that there are no specific cells of disease but only modifications of physiologic types, such as degenerations, perversions, alterations in secretions, change in function, etc. Further that the cell being the ultimate morphologic element which manifests life, "we cannot, must not, transfer the seat of action to any point beyond the cell."

So it would seem that even with a full acceptance of the theory that the pituitary body is the conductor of the endocrine orchestra which sends its injunctions to the sympathetic system by way of the blood stream and thereby to other

parts of the body, yet it is possible to believe that all the recent discoveries which concern the endocrine glands and the changes therein, where the chemical messengers, hormones, arise, would naturally fall under the rule of Virchow's cellular laws.

These glands and their agency in the production of pathologic conditions have only recently come to receive the importance which now and in the future they may be entitled to have. Many disorders which accompany the hypo and hyper functions of this system are now fairly well understood as a short historic summary will indicate.

The Thyroid, by Graves (1833), Basedow (1840), Myxedema by Gull (1873) Metabolism increased in exophthalmic goiter by Müller (1873) Sajous, System of Medicine based on internal secretions (1903) The Parathyroid relation to tetany by Halstead (1909).

Pancreas, and Insulin by Banting (1923), Protamine zinc insulin (1936), Hormones from cortex of supra renal gland which may become a specific for Addison's disease (1930). Liver and liver extracts in pernicious anemia (Minot, Murphy and Whipple, Noble prize 1934). The Pituitary and acromegaly by Pierre Marie (1866). Dictator of all the other glands, Cushing (1910) Relation to diabetes insipidus, Cushing (1912) and hibernation by Cushing (1913). Growth hormone of anterior pituitary gland, Evans and Long (1921). Kamm's report on the isolation of two hormones, pitocin and pitressin (1928).

Gonads, Brown-sequard, 72 years old personally accepted (1889) an injection of testicular extract and the doctrine of internal secretion was born. Theelin, synthesized (1933).

Adrenalin, isolated by Takamine (1901).

Doisy and Allen (1923) standardized the ovarian hormone, folliculin, which produces estrus in spayed rats and mice. Aschheim-Zondek test for pregnancy (1928) by means of an estrogenic substance from the urine of pregnancy, and theelol (1931).

Testosterone, Laquer, Amsterdam, (1933) Testosterone propionate made from wool fat (1938). Hormones found to have anti-hormones to maintain physical balance (1934).

All these and others to be worked out have a high potential promise and of even greater success as the investigations become more clarified by experimentation.

The philosopher, Empedocles (450 B. C.) is reported to have raised the maiden Pantheia from the dead when she had lain thirty days "without breath." This feat added greatly to the fame of the operator but no mention is made of any advantage to the maiden nor yet to society. At present it certainly seems more noteworthy to take a cretin who is mentally dead and physically inert and by administering desiccated thyroid, a trifling incident in the day's work, to convert that poor victim into a more or less competent citizen, useful alike to himself, his family and the State. The study of glandular functions and repercussions is just beginning, and this extension of research will doubtless lead to a fortuitous flowering in the next century.

Research was also devoted to the lymph and blood. In particular Landsteiner received the Nobel Prize (1930) for determining the four types of blood which have become so essential in transfusion. The Russians, with their unlimited opportunities have developed a method of preserving the blood of persons suddenly killed, and using it months later from "blood banks," for transfusion.

So the battle swept on, grimly, effectively, and gloriously for the greatest profession in the world, and came down to the present with a flourish of trumpets over the renewed flowering of the perennial benzene ring by the introduction of the vitamins (Lunin 1880), and by a large band of followers beginning with Funk (1911), and the irradiation of foods with the ultra-violet light by Steenbock and Black (1924), and the Nobel Prize (1937) to Gyorgi for the synthesis of vitamin C. Thus the question long debated by faddists, enthusiasts, cultists, and others, over diets was finally put upon a scientific basis. It was no longer a problem either of nutrition or of belief but rather one of medicinal selection as to the food or vitamin that was needed, just as nicotinic acid in the food controls pellagra.

During this period other groups actively took up investigations of the various means whereby diseases are transmitted, and obtained remarkable results. Typhus fever which had always been a terrifying epidemic was found to be favored indeed by overcrowding, bad ventilation and poor food but the actual transmission, as might be expected from such an environment, was by the bite of a louse. Typhoid, due to food or water contaminated by Eberth's bacillus was easily preventible by sanitation and inoculation. Mountain fever was transmitted by a tick, the germs were artificially cultivated in 1937, meningitis in some forms due to the pneumococcus, and puerperal fever usually to the streptococcus hemolyticus by uncleanliness. Credé put drops

of a 1% solution of silver nitrate in the eyes of the new born and prevented blindness (1872).

Bubonic plague, due to the pasteurella pestis was communicated by rats and fleas but met by Haffkine's serum (1897), or atoxyl (1903), Measles was due to a diplococcus discovered by Ruth Tunnicliff (1917) who produced the disease in animals (1922) and developed a successful serum therapy (1927). Undulant fever traces to milk (McAlpine and Mickle), Infantile paralysis enters the body by way of the nose (Flexner 1936). Amebic dysentery from food and drink. Sleeping sickness due to a trypanosome and transmitted by the tsetse fly (Bruce 1894). Relapsing fever was found by Obermeier to be due to a spirochete (1873). This was an extremely significant event both directly and indirectly since the study of parasitic disease which it inspired resulted in the conquest of syphilis by Schaudinn, Ehrlich and Wassermann.

Many diseases which were not bacterial in origin were found to be caused by ultra microscopic viruses and often with cell inclusions. Among these were warts, trachoma, mumps, typhus and trench fevers, herpes, varicella and smallpox.

Yet in spite of all that was known, learned and understood by the years of research on typhoid fever in 1898, a terrible lesson was forced upon the American people. With complete knowledge of the cause, means of transmission and ease of prevention, our soldiers in the Cuban war, after an almost bloodless victory were swept off by thousands through an epidemic of typhoid. Why? Was it the political control of the doctors, certainly the army men must have known better. Is this to be the unescapable result of political control like the typhoid epidemic in the State Hospital at Manteno?

Malarial fever, produced by Laveran's plasmonium (1880) and known to be transmitted by the anopheles mosquito, impelled Dr. Gorgas, at Panama, to ask the directing engineer for screens to the cabins. "Screens, hell, what do we want of screens," replied the engineer, "it's shovels we need." Then "Teddy" was applied to, he promptly interposed, the screens were supplied, and the canal De Lesseps failed to construct on account of malaria became a great corridor of commerce.

Yellow fever, also arising from a filterable virus and spread by the stegomyia mosquito reveals a tale of patient, heroic and tragic research in science by the American doctors in Cuba after the war. Drs. Walter Reed (1851-1902), Carroll, and the unfortunate Lazear who died from an accidental bite, were the central figures. Here with a God-sent Governor-general who had been a doctor, the transmitting agent was found, Havanna freed from the disease, and America from the fear of an epidemic. This feat will always remain a splendid chapter in the history of medicine and a source of proper pride to the profession. Vaccination for yellow fever (Rockefeller Foundation 1937).

During this century, Illinois had grown enormously in wealth and prestige. The population had risen to (est.) 8,000,000 in the State and 4,000,000 in Chicago. The general mortality in the State had dropped to 10 per 1,000. Maternal mortality in the State was 2.9, in Chicago 2.5, and in the Nation 4.35. The mortality for infants was 38.4 per 1,000 in the State, and 31.3 in Chicago which is the lowest recorded so far in any large city in either hemisphere.

In the prolonged drama of medical progress which the world has gazed upon during the past century, scientific effort and enthusiasm of individuals and group have produced, in the harvest of thought and of benefit to humanity, an abundance infinitely greater than that in all the ages which preceded it. This era has covered intensively the whole system of the human body, its diseases and their remedies up to the final stage of preventing their onset. The trend at the present time is toward an elaborate and continuous investigation of the glandular structures, and the study of foods and vitamins as major phases of corrective and preventive medicine which is the dominant motif of this epoch.

Thus the application of medical science to the relief of human ills, without Government aid or political interference, has gone forward by leaps and bounds until in this year of Grace 1940, the result must be recognized as one of the greatest triumphs of civilization.

To attempt to include all the incidents, advances, improvements and revisions of this period in a few short columns; to think of repeating the wonderful narrative which Garrison has painfully compressed into somewhat less than five hundred pages would be useless and ill-advised. Our medical history is open to all. The

thought came however and remained that a brief survey of some of the most fertile and generative ideas of this memorable crusade during the life of the Society might serve to recall to the brethren those prodigies, both near and remote, begotten by their predecessors, and to stimulate a renewed appraisal of the hard earned victories which the Brahmin caste has bequeathed to us. This sentiment is peculiarly appropriate since it was wholly within the life-span of the Society that the Sun of Science rose with healing in his wings.

Upon a few rough ashlars of certified knowledge, laboriously delved from the mire of ignorance and superstition, the sturdy pioneers of the 19th century laid the foundations for the vast temple of modern medicine on the erection of which, the sons and grandsons of the founders have toiled for more than three generations.

The structure is still incomplete, but even so it lifts its lofty pinnacles to the skies and radiates the beams of scientific endeavor in every direction as a bright signal of success assured, and as a beacon of guidance to improvements hoped for.

Evolution and growth advance by such slow and imperceptible degrees that to those who are part and parcel of the movement, the fingers of time scarcely seem to stir. Yet when a backward glance reveals the length and roughness of the road, and lays bare in thought the wayworn thousands who have made that journey of grief and hope on the via sacra of science; if that retrospection also discloses the achievements and triumphs of recorded experience, no sloth or reluctance will be noted in the headway but rather a grand march, so logical in development and purposeful that the imagination must be spurred to a warm sense of admiration and thankfulness for the amplitude of the ultimate result.

Thus we remain safe in the hallowed arms of accomplishment but only as a prologue of vain longings to pierce the future. From the "topless towers" of the present edifice, securely based and durably cemented by demonstrated truths, one is fain to look out upon the medicine of the next century, yes, if only to feel the awe, wonder, and strained surmise that swept and muted the venturesome soul of old Balboa as he gazed upon the boundless waters of the Pacific from that surmounted peak in Darien.

PROGRESS OF SURGERY IN THE STATE OF ILLINOIS

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The history of surgery in Illinois began with a doctor who came to Chicago in 1835, a medical school chartered by him in 1837 which was opened in 1843, and a hospital established with his help in 1847. Chicago in 1835 was a muddy frontier village with less than 3,000 people. Twelve years later it was a medical center in embryo, through the vision of Daniel Brainard, pioneer surgeon of the Middle West.

Dr. Brainard's appearance when he arrived in Chicago the year following his graduation from Jefferson Medical College is described by a friend to whom he came for advice. He was "wearing pretty seedy clothes, was mounted on a little Indian pony, and was nearly out of funds." Two years later, at the age of 25, he was busy obtaining the second charter for an institution of learning that was granted by the legislature of this state. A year after that he was performing an amputation at the hip joint that attracted wide notice. By the time he was 31 he was president of the faculty and professor of anatomy and surgery at Rush Medical College, whose opening had been postponed because of a panic that started soon after he obtained the charter for it. Four years later he was rejoicing over the provision of better clinical facilities for teaching and care of patients through the opening of a 100-bed hospital.

The beginnings of the "medical center" were rude. The medical school was opened in two small rooms in Clark street and continued the next year in a building erected at Grand avenue and Dearborn street called the "rat-trap" because of its peculiar structure and center dome and costing $3,500. The hospital was opened in a warehouse at State and Kinzie streets.

Daniel Brainard even carried the fame of early surgery in Illinois abroad. In 1853 he read two important papers before the Society of Surgery of Paris, following which he was elected to honorary membership in that group and also in the Medical Society of the Canton of Geneva. A year later the American Medical Association awarded him a prize for his essay on the treatment of "ununited fractures and certain deformities of the oseous system." At the time of his

death from cholera in 1866 he was considered "the most commanding figure in medicine and surgery in the great Northwest."

Medical education projects were started in two other parts of the state about the same time that Dr. Brainard was planning to open the school in Chicago. The others were short-lived, however. Dr. G. W. Richards opened in the fall of 1842 the Franklin Medical College at St. Charles. Illinois College at Jacksonville opened a medical department in the fall of 1843, with Dr. David Prince as professor of anatomy and surgery. Both schools dissolved for a reason which throws light on the slow progress of the art and science of surgery before the middle of the nineteenth century. The people in the communities hated the schools because the students robbed the graveyards to procure anatomical material for dissection. It was the only way they had of getting it. Sometimes the professors were suspected of conniving. Dr. Richards was mobbed and forced to leave St. Charles in ignominy after grave robbing by students. He went to Rock Island, where, in 1849, he started another school which later moved to Davenport and soon went out of existence. Quincy had a medical school for eight years, between 1882 and 1890. In Galesburg courses were offered for one session in 1903 in a medical department of Lombard College.

Dr. Nichols Hard, a member of the faculty at Franklin Medical College, St. Charles, gained wide reputation as an anatomist and surgeon. One of his achievements was successful performance of tracheotomy on a child who was threatened with death because of acute inflammation of the windpipe following a fall into a cistern. Dr. David Prince of Jacksonville was also a pioneer surgeon and anatomist, who established in that place a sanatorium for the treatment of surgical cases and chronic diseases.

Surgery progresses through the men who practice it, chiefly, and the most brilliant of these men tend to excel in teaching to others what they have learned from study and experience. Hence, it is in the medical schools and the hospitals which provide clinical facilities for them that we look first for surgical leaders.

Chicago of the early days had two rival schools —Rush, and Chicago Medical College, opened in 1859 as the medical department of Lind University and eventually to become Northwestern University Medical School. Connected with the first we have the name of Brainard, and later that of Moses Gunn, who succeeded him in 1866 as professor of surgery. In the latter, Edmund Andrews, who became the leading operating surgeon in the Middle West following Dr. Brainard's death, was professor of principles and practice of surgery, resigning in 1899 after forty years' service.

In 1877 and in 1878, respectively, Franklin H. Martin, who was to conceive the idea of forming the American College of Surgeons thirty-six years later, and John B. Murphy, who was to become one of America's greatest surgeons, began their medical education and, interestingly enough, for our purpose, they chose different schools. Murphy's biographer, Loyal Davis, records that after hearing his first lecture on surgery from Professor Gunn, Murphy pronounced him "magnificent" and after his first surgical clinic he immediately aspired to become a surgeon and to "operate like Gunn."

Martin at Chicago Medical College was watching Edmund Andrews perform operations in the old amphitheater at Mercy Hospital, which was located in the same block. Of him Dr. Martin wrote in his autobiography:

"Professor Andrews was in the midst of his experiments with antiseptic surgery, and every operation was the signal for a trial of new theories. This great man would shuffle into our little sitting room and speak with us, as though we were his equals, of the thoughts that were running through his scientific brain. We were stimulated to read and to discuss at length everything on antiseptic surgery and Lister's theories that could be found in current medical literature."

Murphy interned at Cook County Hospital and Martin at Mercy Hospital. Loyal Davis describes the County Hospital of those days as follows:

"The hospital had no equipment except a large amount of medicines and an adequate supply of material for bandages, splints, and sutures. There were no microscopic or clinical laboratories apart from the drug room. Laboratory diagnosis was unknown except such procedures as were connected with the chemical examination of urine. Asepsis was unknown. Interns in touch with cases of erysipelas and gangrene, or engaged in postmortem work, were assumed to have no connection with obtetrical cases, but there was no stern rule against it and they thought nothing of maintaining friendly relations with laudable pus. Puerperal infections were frightfully frequent and deadly, and as a result the obstetrical ward was closed on many occasions for weeks at a time. . . Surgery was distinguished by bold ligations of blood vessels, amputa-

tion of arms and legs and cutting into the urinary bladder for stones. McDowell in Kentucky had but recently recorded his experiences in performing the operation of ovariotomy. The abdominal cavity, though, was far beyond the surgical possibilites of the day. If Nature did not intervene, the unfortunate patient with a tumor or inflammation of any of the abdominal viscera was in a hopeless condition. Heaven knows that if Nature did not intervene man wouldn't. But if it comes slowly, progress does come to surgery. With Lister's methods being adopted in spite of diehards, gangrene and running wounds were disappearing rapidly. Anesthetics, too, added greatly to the advances made in surgery. Whereas surgeons had had to rush through an operation at lightning speed and under great disadvantages, they now were able to take their time. The days of sleight-of-hand feats were over, and the prestidigitations which had made many surgeons famous were giving way to careful, deliberate procedures."

On the staff at Cook County Hospital was a lecturer and demonstrator in pathologic anatomy whom Murphy came to idolize. Every Thursday evening he, Frank Billings, and a few other internes, met with Christian Fenger at his home, to examine under the microscope and to discuss sections of diseased tissue. The time came when Dr. Billings was to write of Dr. Fenger:

"Dr. Fenger has done more for medicine and surgery in Chicago and the Northwest than any other man."

Another eminent surgeon with whom medical students and internes of that day came in contact was William Heath Byford, president of the faculty of the Woman's Medical College which he had helped to found in 1870, and professor of obstetrics and gynecology at different times at Rush and Chicago Medical College. He was known as the first in this country to advocate stitching the open sac to the abdominal wound after enucleation of cysts of the broad ligament.

Professor of anatomy at Rush until 1859, and thereafter at Chicago Medical College, and one of the founders in 1882 of the College of Physicians and Surgeons of Chicago, later to be the College of Medicine of the University of Illinois, was Robert L. Rea, who, Dr. Billings said, "Seized upon all the rapidly increasing innovations in surgery and adopted them, for his scientific spirit caught and adopted the sensible ideas of aseptic and clean surgery even in those days."

Appointed to the chair of surgery at Rush Medical College at the death of Dr. Gunn in 1887 was Dr. Charles Theodore Parkes, of whose contribution to surgical progress Dr. Murphy wrote:

"To Professor Parkes belongs the honor of having made the first scientific experimental research on gunshot wounds of the small intestines, in the West. His work was so thorough and so complete that it laid the foundation for many of the subsequent practical appliances for the repair of intestinal lesions. . . His work in the surgery of the gall-bladder, which was then in its very infancy, was no less conspicuous in influencing the profession in the proper direction."

Dr. Parkes died at the age of 48, in 1891, and was succeeded as professor of surgery and clinical surgery at Rush by Nicholas Senn. John B. Hamilton was at the same time appointed professor of the principles of surgery and clinical surgery. The former helped to develop the modern ideas of the use of surgery in tuberculosis, furthered abdominal surgery through extensive experimental work, and added greatly to the knowledge of intestinal perforations and their treatment. The latter was one of the first surgeons to introduce newer methods of herniotomy. In 1895 he performed the second successful operation for suturing intestines following a wound by a pistol shot.

The students of the early '80s were now becoming the masters of surgery. In 1892 John B. Murphy joined the faculty of the College of Physicians and Surgeons as professor of clinical surgery. Franklin H. Martin had been professor of gynecology and clinical gynecology and abdominal surgery at the Postgraduate School, later to be known as the Postgraduate Medical School of Chicago, since he helped to found it in 1889, having previously been professor of gynecology in the Chicago Policlinic, founded in 1886. Surgery had progressed to the point where school days were never to be over for the conscientious surgeon. Medical educators such as Murphy, Martin, Nathan S. Davis, Sr., W. Franklin Coleman, A. Reeves Jackson, J. H. Hollister, L. L. McArthur, Fernand Henrotin, Christian Fenger, Henry T. Byford and Albert J. Ochsner were looking beyond the undergraduate and the interne to the need of the surgeon in practice for further training. Postgraduate schools and clinics, and eventually, in 1910, the forming of the Clinical Congress of Surgeons of North America to sponsor the holding of clinical meetings, were the result.

In 1940 we have in Illinois the second greatest medical and surgical center on the continent.

The state has five approved medical schools and a postgraduate school. We have nine hospitals, all in Chicago, approved for graduate training in general surgery and the surgical specialties. We have throughout the state 136 approved hospitals, located in 54 different communities, on whose staffs are surgeons who have been trained, many of them, in the state's own medical schools and by its own eminent surgeons. Surgeons of Illinois have been quick to adopt in practice the improved surgical techniques developed elsewhere, and have been equally ready to spread abroad the news of their own discoveries.

Not the least of the evidences of progress of surgery in the State of Illinois is the strength of medical and surgical journalism here, which in prolific measure brings to every physician and surgeon wherever he may be located, the new facts and theories that constantly arise. Ease of communication of ideas, through operative clinics, surgical motion pictures, demonstrations, lectures, and the printed page, is a powerful influence in bringing surgery in the average sized community up to the standard of that in the large cities. Coupled with better initial training of the surgeon, through the organized graduate training programs which more and more hospitals are offering, this influence is the greatest single factor in assuring to every patient the best possible surgical care and that goal is one toward which progress has certainly been rapid in the past century in Illinois.

A CENTURY OF TUBERCULOSIS IN ILLINOIS

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How clear is our picture of the prevalence and ravages of tuberculosis in 1840? The picture is not clear, and in order to bring out the highlights, fact must be charged with some fantasy. In Chicago, until ninety-nine years ago, there was no attempt at vital statistics. A town of four thousand odd inhabitants, too involved in life to think of death, is not interested in mortality enumerations.

In 1841 a Chicago City Council ordinance required physicians to give a certificate of death, and named the city sexton's office as the repository of these certificates. In the sexton's records there is little reference to tuberculosis.

During the period from 1840 to 1850 tuberculosis failed to impress itself upon the public mind. Tuberculosis in those days was regarded not as a contagion but as hereditary, a family affair, and was unheralded by panic, unaccompanied by repulsive stigmata. It was consumption, a wasting; euphemistically a decline. Even had it been recognized as a contagion the disease was of too pale a texture to hold its line in history against the drama of the scourging epidemics, of too weak and insidious an onset, of too meek a course to stand out against the scarlet fever of 1844, the smallpox scare of 1848, the cholera of 1849, '50, '52, the smallpox of 1854 and '55, the cholera of 1854, the typhoid of 1856, the malaria that reached its peak in 1857 with a mortality of 53.6 per 100,000.

It was a period of business as usual between panics, of speculation, gambling, growth, clapboard houses, plank roads with muddy sidewalks and puddled streets, concomitants of the low, swampy land. The paralyzing financial crash of 1837 was being forgotten. Around 1842 business picked up, the population increased to 6,248 and the potato patches sold at a premium as building lots.

Despite the epidemics, the terrific mortality of certain years, an annual death rate of 73.8 per 1,000 in 1849, 64 per 1,000 in 1854, the forties and fifties were growing years, the population increasing from 4,470 in 1840 to 109,260 in 1860, an increase of 2,344 per cent. With the growth in inhabitants came an extremely fast economic and cultural development.

The Chicago Morning Democrat, the Chicago Daily Journal and the Chicago Tribune were founded in the forties. Cyrus McCormick came to town to promote his reaper and Horace Greeley to attend the River and Harbor Convention of 1847. William B. Ogden won his epochal struggle against the plank road advocates and in 1849 his dream of railroad transportation came true in the erection of a one-story, frame depot at Kinzie and Canal Streets. Came the gold rush and adventurers arrived daily, camped on the outskirts to pre-

pare for the trek across the prairies, threw refuse and dead animals into the river and shattered the health canons as they waited for the wagon factories to catch up with them.

Faced with cholera, typhoid, smallpox, dysentery, working in etiologic darkness and spurred by panic, the early Chicagoans filled in swamps, raised levels, constructed sewers and built pumping stations. Throughout the state the recurring epidemics engendered similar preventive efforts. Along the Mississippi, 1839 was known as the "sick year."

Both in the state and Chicago, the power and efficiency of the created health agencies waxed and waned in direct proportion to the seriousness of the epidemics. In 1834, in the face of a cholera scare, a temporary board of health was established in Chicago; in 1835 a permanent board, consisting of 7 members, was established and continued when the city was incorporated in 1837.

In 1842 a city hospital was built at a cost of $200; in 1845 an added $300 was spent for expansion. In 1847 the first general hospital, known as Tippecanoe Hall, was started at North Water and Dearborn Streets. In 1848, Dr. H. S. Huber was appointed city physician "without salary." In 1852, with 630 cholera deaths, and smallpox prevalent, the city physician's salary was fixed at $500. Not until 1866 and a fresh cholera epidemic did the sanitary duties return to the medical profession when Dr. T. B. Bridges was appointed health commissioner and given 32 temporary assistants.

Downstate the pendulum swung less wildly between feverish effort and lethargy. In 1840 activities were generally stepped up throughout the state and at Springfield preliminary meas-



Figure 1—Tuberculosis Mortality Rates (All Forms)
City of Chicago
1850-1939

ures were taken to organize a state medical society. This signalized the awakening of a health consciousness. In the fifties, immediately following the organization of the Society prevention was accentuated. Boards of health were organized at LaSalle, Peru, Rockford, Belleville and other centers.

In Chicago and throughout the state, during the era of alternating growth and panic, 1840 to 1870, the figures that stand out with special prominence in the public health picture are those of Dr. Nathan S. Davis, Dr. John W. Rauch and E. S. Chesbrough, chief engineer for the sewage commissioners.

But what of tuberculosis? Even evangelist Davis has little say of it. Nor does Rauch, despite his immense preventive drive against disease, pay any attention.

Occasionally, however, tuberculosis peeps through the medley of the epidemics. In 1829, in the first record of morbidity statistics for Chicago, the United States Army reported 11 men of the garrison sick with diseases of the respiratory organs. In 1836, Peck, in his Guide for Immigrants, advocated the great outdoors for health and lit for a moment on tuberculosis, took a step toward phthisiotherapy and, as it happens, a wrong one. "It is common," he says, "for a frontier man, whose health is on the decline, and especially when indications of pulmonary affection appear, to engage in a hunting expedition to renovate his health."

Around 1850, when the first official mortality record was published, the picture clears but for the twofold reason that burials outside of the city were not recorded and that the records were still being kept by the city sexton, tuberculosis reports are both inadequate and inaccurate.

In 1851, with a population of 34,000, the tuberculosis death rate in Chicago was given as 123.5 per 100,000. In 1852 it had risen to 300 per 100,000, a figure which it approximately maintained until 1855, when it fell to 202, rising again to 342 per 100,000 in 1856 and to 371 per 100,000 in 1858. By 1866 it had again dropped to around 200 per 100,000, rising throughout the following decade to 274, again dropping back, at the end of the decade, to around 200.

The figures jump around too much to be convincing. Some say that the hardy, pioneering stock in early Chicago should show a low incidence; others feel that overcrowding stepped up the incidence, that the Indian aided in dissemination, but of this one may be skeptical and we do not know whether the infection, to any serious extent, had traveled westward through the tribes. It is more reasonable to suppose that the whites disseminated the disease amongst the Indians rather than vice versa. The Indians were, by far, the more susceptible race and the degree of contact necessary to promote actual disease was consequently less.

For the seventies and eighties the reports are rather startling. In 1875 Springfield showed a tuberculosis mortality of 275.6 per 100,000, 190.8 per 100,000 for 1876 and 239.2 per 100,000 for 1877. In 1881 Rock Island had a tuberculosis mortality of 325 per 100,000. In 1887 the rate for Rockford was 141.8 per 100,000. Quincy in 1875 had a tuberculosis mortality rate of 330 per 100,000 and a mortality in 1876 of 469 per 100,000. Even with Slab Hollow and the general picture of communicable disease as background, these figures for Quincy seem extremely high. Over the seventies and eighties many of the downstate towns showed a higher tuberculosis mortality than Chicago.

It seems strange that the extremely high rates over this period, 1860 to 1880, did not arouse a greater public interest and stimulate some attempt at preventive measures. On July 1, 1877, two state laws, one known as the State Board of Health Act, the other as Medical Practice Act, both implemented by the board of health, organized July 12 of the same year, became effective. But the tuberculosis program was still largely untouched.

Dr. John W. Rauch, secretary of the State Board of Health, who served almost continuously from 1877 to 1891, never locked horns with the disease. With an insight that transcended state and national boundaries and saw the whole world as a health unit, Rauch spent all his wealth of organizing genius in the epidemic field. For him and for workers of similarly fine calibre throughout the country, 1882 and Koch's epochal discovery should have lit the torch and brought it to a flame.

The concept of tuberculosis as a contagious disease, adumbrated by Cohnheim and Klencke, established by Jean Antoine Villemin, con-

firmed by Koch in the best scientific paper ever written, failed to gain general acceptance even in the profession. Control of the focus as the preventive measure! This rudimentary concept in tuberculosis epidemiology found no sure foothold in the public health mind of the eighties and nineties, and it has found no sure foothold today.

Intellectually we recognize that tuberculosis is an infectious disease. Practically—deceived as were our forefathers by the meek demeanor of tuberculosis—we ignore the implications. Few sanitarians are inclined to take a strong stand on tuberculosis. Tuberculosis still remains a major cause of death—for certain groups, as the Negro, a leading cause. The disease is preventable and Koch gave us the formula, but it remains as the leading public health blunder. The 12,000,000 Negroes of the United States show a tuberculosis mortality in line with the worst rate of one hundred years ago.

A certain amount of progress in tuberculosis control has been made. We failed to follow through with Koch but we started. Throughout this country as abroad, the public health conscience became aware of tuberculosis and the anti-tuberculosis organization came into being. Dr. Lawrence F. Flick, working in Philadelphia in 1892, seems to be the pioneer in initiating the world-wide anti-tuberculosis movement. Similar societies were soon formed in European cities, in America state organizations were founded, and now there is hardly a civilized nation in the world that lacks a special society of this sort. These are private enterprises, supported by contributions. In only New York City and Chicago has any material assistance been received from paid health officials. The leadership comes from public-spirited citizens, too often by a non-medical man. As individuals, many members of city or state health boards have taken an active part.

However, both in his private and public capacities Dr. James A. Egan, secretary of the Illinois State Board of Health from 1897 to 1913, was a force in early tuberculosis work. Influenced undoubtedly by Dr. Theobald Smith through a report to the governor in January 1899, he outlined procedures for herd inspection, with penalties against owners who failed to report sick animals, and agitated for legislation on tuberculin testing of herds, which became a reality in May, 1899. In 1898 Dr. Egan made the first mention of a state sanatorium. Though he aroused sufficient interest to force the matter before the legislature, the idea was dropped.

To Dr. Theodore B. Sachs and Harriet Fulmer of the Visiting Nurses Association belong credit for the early tuberculosis activity in Chicago. Through Harriet Fulmer's efforts the Tuberculosis Committee of the Visiting Nurses Association was organized in 1903 and remained active until 1906, when the work was taken over by the Chicago Tuberculosis Institute. Miss Fulmer refused to see obstacles, and opened the Glencoe camp in the summer of 1905. She wrote, "The tuberculosis work has been the largest problem of the year. What to do with the hundreds of hopeless cases that come to us is indeed one of our trying situations?" In 1908 she wrote, "As many know through the general appropriation of $2,000 by the board of directors of this association four years ago (1904) a Committee on the Prevention of Tuberculosis was formed from which sprang the Chicago Tuberculosis Institute which stands today a child of our own efforts."

The Chicago Tuberculosis Institute was the child of the Visiting Nurses Association and the Municipal Tuberculosis Sanitarium is the child of the Institute in the genesis of which Dr. Sachs was particularly active. In 1900 he found the first tuberculosis clinic in Chicago—Tuberculosis clinic of the West Side Dispensary of the Jewish Aid Society.

Dr. Sachs was an advocate of the survey and with his dispensary work, undertook a house to house survey in an 8 acre congested district and found 54 new cases. A later more extensive survey uncovered 1,016 cases.

In 1898, while Dr. Egan was busy downstate and Harriet Fulmer and Dr. Sachs were turning over every loose stone in Chicago, the writer, with Dr. C. M. Wood, was in charge of the old Dunning Tuberculosis Hospital, started in 1894 as a pavilion in connection with the county poorhouse, the first county institution for segregation of the tuberculous in Chicago and I believe in the country. In 1898 the building housed around 250 advanced cases and the con-

ditions inside the institution had better be left to the imagination.

In 1898 the 275 beds at Dunning were our whole tuberculosis accommodation. In 1900 the Children's Memorial Hospital and the Hospital for Crippled Children accepted some children with bone tuberculosis and the County Home for Incurables had about 60 or 70 beds for terminal cases.

Throughout the state, hospitalization was no better. In 1900, Dr. Egan's proposal for a state sanatorium came again before the state legislature but failed to gain the governor's approval. Again it was up to the private individual. Downstate, as in Chicago, the first step was undertaken by men unconnected with the official bodies. It is generally agreed that Dr. J. W. Pettit was the standard-bearer for Illinois. He opened his Ottawa Tent Colony in 1904 and proved that the Illinois climate was not incompatible with cure. This was the first sanatorium in Illinois, and Dr. Pettit's results and enthusiasm led to the organization of the Illinois Tuberculosis Association.

Meanwhile, in Chicago, the drive for accommodations was on. In 1903 St. Anne's Hospital was opened, with 50 beds for tuberculous patients. Harriet Fulmer opened her Glencoe Camp about this time, and these two departures constituted the sole additions for some years. The minds of the laity had to be conditioned.

The people had heard something of tuberculosis. From 1905-1907 when Dr. Charles J. Whalen was commissioner of health, might be called the period of organized, intensive propaganda. With the second lowest annual death rate from all causes in the history of the city, the health of Chicago, on the whole, was good, and public interest, with proper management, could be centered on tuberculosis. With Dr. Whalen, Dr. Sachs and Harriet Fulmer as leading propagandists, the program of education took form with a tuberculosis exhibit in the public library, a study of tuberculosis in Chicago published by the City Homes Association and the aid of the press which was a great factor. In 1906 the Bulletin of the Department of Health was first circulated weekly. The milk depots were rigorously inspected and food inspection stepped up. For the first time milk from dairy farms was examined bacteriologically.

About this time the Chicago Tuberculosis Institute took over the activities of the Tuberculosis Committee of the Visiting Nurses Association. In 1907 and 1908 the Institute, supported by church, hospital and social organizations, inaugurated its 7 part-time dispensaries. Through this period Dr. Whalen, Dr. Sachs, Harriet Fulmer, the Institute were working indefatigably toward increased tuberculosis accommodation.

Much progress was made in preparing public opinion for the Glackin Act, some progress was made in provision of immediate facilities. Dr. Sachs opened the Edward Sanatorium at Naperville in 1907 and the Winfield Sanatorium in 1909.

There was a distinct increase in anti-tuberculosis activity throughout the State. The sale of Christmas Seals was inaugurated by the Illinois Society for the Prevention of Tuberculosis in 1905. The seals were effective in stimulating interest over large areas. In the same year downstate made tuberculosis a notifiable disease and an ordinance passed in Peoria required report of tuberculous individuals.

In Chicago Dr. Sachs and his co-pioneers were still working for a statewide program of field and sanatorium care. The new cases found in the surveys and by the dispensaries accentuated the problem and its magnitude was fully publicized. Success came: the public mind was saturated; the Glackin Act, the legislation under which the Municipal Tuberculosis Sanitarium still operates, was passed in 1908 and became effective in a short time. On September 1, 1910, control of the 7 dispensaries of the Chicago Tuberculosis Institute was assumed by the sanitarium.

Because the Municipal Tuberculosis Sanitarium has entire responsibility for control and management in the city, the story of tuberculosis in Chicago and the story of the sanitarium are identical from now on and include work of the various health commissioners since 1908, most of them members of the sanitarium board and intimately connected with its development and progress. Dr. William A. Evans, the first of these commissioners, with Dr. Sachs and Harlow N. Higginbotham, formed the original

Board of Directors of the Municipal Tuberculosis Sanitarium, which met first on April 22, 1909.

Evans left a deep impress on the tuberculosis program in Chicago. When the writer first became intimately interested in tuberculosis, Dr. William A. Evans was one of the outstanding public health figures of the country. Commissioner of health from 1907 to 1911, he effected innovations which are still effective in tuberculosis work: the enforcement of the report, the pasteurization of milk, the score card system of dairy inspection, systematic bacteriologic examination of milk supply, testing of pasteurizers, the prohibition of bulk milk sales.

Evans saw the impracticability of attempting to meet accommodation needs with new construction, and tried to link the tuberculosis program with the general hospital. This thought, pushed aside in 1907, is one of the dominant principles today. As a result of his efforts the city rose to preeminence in tuberculosis work and in 1907 Chicago was awarded a silver medal by the International Congress on Tuberculosis for the control measures enforced.

Toward the end of Dr. Evans' period as health commissioner, November 11, 1911, the construction of the sanitarium at Bryn Mawr Avenue and North Pulaski Road was begun on the 160 acres there. The gates opened to patients in March 1915.

Dr. George B. Young, the health commissioner under Carter Harrison and the incumbent at the time the sanitarium was actually opened, had no very intimate connections with the movement. Nevertheless, aided by Dr. Gottfried Koehler, the assistant health commissioner, he made his contributions largely on the enhancement of Evans' milk control measures.

The year 1915 and the early days of the sanitarium bring a restless, progressive, forward-looking personality with inspiration and a touch of circus, Dr. John Dill Robertson.

Dr. Robertson, a promoter, an organizing wizard of great initiative, supreme self-confidence, in public health was successful. Though his methods and technic were not always beyond censure, his objectives were sound, his procedures effective. With equal zest be built and demolished, tore down the work of others but also his own design. He had vision and the results testify for him. The tuberculosis program is the better for Dr. John Dill Robertson. Weighing all things, were I asked to name the greatest health commissioner Chicago ever had, I would vacillate between Dr. Evans and Dr. Robertson and, perhaps, finally flip a coin.

During Dr. Robertson's time the sanitarium accommodation was increased from 650 to 800 beds; the full-time dispensary plan was inaugurated; the infectiousness of tuberculosis was preached; the state regulations amended to prohibit intimate family contact between the open case and the child, and practical isolation of open tuberculosis was attempted.

As far as my knowledge goes, Dr. Robertson was the first man who really attempted to enforce his conviction that tuberculosis was a contagious disease and so fought newspaper opinion, public opinion and won. His amendment of the state regulations meant business. To enforce isolation of refractious open cases he sent an ambulance, the "Black Maria" with attendants to forcibly remove the recalcitrants from their homes and children. This started an uproar. The departure was deemed inhuman and so rated in the press, and in the homes there were lamentations, yells, fist fights, and knife-play. Dr. Robertson remained unmoved. To all he had only one answer, "Better the restraint of one sick individual than the certain doom of the family."

Today segregation is accepted. The procedures inaugurated by Robertson are operative in their original form and enforced hospitalization is resorted to when necessary. As of January 1, 1940, there were 3,947 known open cases in Chicago, only 35 of them in contact with children, all these latter in process of clearance. In only 9 instances was forcible hospitalization used.

Attempting to make the compulsory report really compulsory, Dr. Robertson established a hearing board to which every doctor who failed to report a case was summoned. The questions asked by Edgar A. Jonas, later Judge Jonas, then attorney for the sanitarium, were embarrassing and provocative, and the possibility of a jail sentence made the hearing board unpopular but it worked; reports jumped.

Dr. Robertson had the epidemiologist's angle toward the discovery of new cases. Like Sachs

he was an advocate of the survey. In 1916 a house to house survey of 8 square miles disclosed 14,282 new cases of tuberculosis in 165,700 people examined. The survey was made largely without the x-ray and many cases diagnosed as tuberculosis were later dismissed. It is significant that 7,000 cases were found in children. He also conducted a housing survey during which 22 blocks in the tuberculosis survey areas were examined but no direct relationship between tuberculosis and housing conditions was found. A spot map of Chicago today would show very much to the contrary.

In the protection of milk supply Robertson followed Evans and, taking advantage of an epidemic of infantile paralysis, ordered pasteurization of all milk and cream. In his drive to purify the milk supply he drove many of the recalcitrant milkmen out of business. The reform was necessary. Many of the smaller milk handlers were careless, dirty and refractory to sanitary advice.

Robertson knew how to choose his help and how to expand to the fullest the potentialities of his workers. Associated with him in his tuberculosis work was Dr. Grace S. Wightman, an influential figure who had much to do with the early development of the sanitarium, and was largely responsible for the success of the full-time dispensary, the establishment of the statistical system and the field program. She laid the groundwork of the plan which regulates the field activities in Chicago today. Dr. Wightman served the institution from March 15, 1917 to October 23, 1923.

In 1912, under the auspices of the Illinois Federation of Women's Club, a tuberculosis survey was made throughout the state, in 1913 a milk ordinance was passed in Cairo, in 1914 Dr. St. Clair Drake was appointed Director of the State Board of Health and stepped up all health activities.

Dr. Drake, a man of quiet demeanor but deep inward resource, instituted lasting reforms and greatly improved the health organizations throughout Illinois. He was an excellent health educator and used the state fairs, baby conferences, exhibits, motion picture and stereoptican slide shows, newspapers and state publications such as the Health News.

Dr. Drake was replaced by Dr. Isaac Rawlings in 1921. Considerable advance had been made in tuberculosis work over the state. In 1915 it was made a reportable disease by the State Board of Health, a survey was made of White County by the Illinois State Association for the Prevention of Tuberculosis, the municipal tuberculosis sanatorium at Peoria was endorsed by popular vote, and the Rockford Tuberculosis Sanatorium was opened. The law extending the Glackin Act to counties resulted in additional accommodation. The following year 8 counties took advantage of the law and in 1918, 33 counties.

At the close of 1927, of the 46 counties working under the Glackin Act, 15 owned their own sanatoria, the remainder using the funds to hire sanatorium care for their charges. In 1919 the first county tuberculosis sanatorium, created under the provisions of the Glackin Act, opened at Ottawa. In August the county sanatorium was opened at Bloomington.

Since 1918 the tempo of new construction has slowed down, the hire system is static. The period, 1918 to 1931, is one of consolidation.

In Chicago the leading figures in tuberculosis work were Drs. Herman N. Bundesen, James A. Britton, and Benjamin Goldberg. In infant welfare, food inspection, milk and dairy control, general epidemiology, Dr. Bundesen's work over the period was outstanding. Many of his public health procedures have formed the pattern for similar work throughout the country, and his influence in consolidating the tuberculosis gains was immense. He made the police power of the health department available to the sanitarium, and generously cooperated in quarantine and isolation. On the board of directors of the sanitarium from 1922 to 1926, with the collaboration of Dr. Britton from 1923 to 1926, he kept the institution on an even keel.

Dr. Goldberg, secretary of the board of directors, 1927 to 1931, continued the good work and added valuable contributions. He established a school of nursing, an undergraduate and postgraduate school for students and physicians at the sanitarium, reformed the dietary plan, stepped up vocational training and the sanitarium tempo, as a whole.

Meanwhile, the tuberculosis death rate with the trend everywhere, fell consistently for Chicago and the state. In 1915 the mortality rate

in Chicago was 170.6. By 1931 it had fallen to 66.2. Similar decreases took place throughout the state. At Springfield the rate fell from 157.6 per 100,000 in 1915 to 80.3 per 100,000 in 1926. In the state the rate decreased from 128.1 in 1915 to 62.5 per 100,000 in 1930. During most of the period the rate for the state was below the average and that for Chicago was the lowest of any large city in America.

We are largely at a loss to account for the causation and dynamics of the tremendous drop in tuberculosis mortality during the last twenty years. In 1880 a rate of 346 per 100,000 prevailed at Berlin, 800 per 100,000 in Budapest, 679 per 100,000 in Vienna, 629 per 100,000 in St. Petersburg and these rates were halved by 1900, during a decade when the anti-tuberculosis crusade was not effectively operative and the velocity of the fall over this period parallels the fall from 1917 onward.

The accompanying graph represents the mortality curve in Chicago from 1852 to date. The various panics and depressions did not seem to exercise much influence. In the panic years 1873, 1893, 1907 and 1929 a slight increase in mortality was followed by a drop. Nor did the World War seem to exercise an influence. The steepest decline was from 1918. Tuberculosis appears to be a disease wearing itself out rather than a disease conquered.

Within the last twenty years, trends and attitudes toward certain phases of tuberculosis work have changed. Around 1917 to 1920 the early case constituted the desideratum for sanatorium admission. The late case, considered hopeless, was relegated, when cared for at all, to the tuberculosis section of the county or municipal hospital. As the idea of tuberculosis as a contagious disease grew, as the necessity for hospitalization became apparent, the scope of the sanatorium widened and the advanced case developed an increasing ratio of admission. Since around 1931 there has been a growing acceptance of collapse therapy for tuberculosis in all stages and today the late case is no longer a pariah.

The national organization through its branches has exerted a tremendous influence in the publicity and educational campaigns that brought our present tuberculosis organizations into being. The pioneers in the various cities and centers, working through the local branches stimulated public interest, aroused public enthusiasm and engineered legislation, which are the province of the local organizations. In this province they excel. The pioneering bodies that built the institution can, and should support it afterwards. The municipal or county institution should continue to receive this special type of help and benefit from the skill and experience of the branch associations. In any city the local branch of the national and the established institution should work harmoniously together.

In too many instances this is not the case. The branch frequently deviates from its function of organization and education and strikes out on new and unfruitful lines. Instead of one inclusive organization with two independent though correlated subdivisions, there are, within the community, two distinct tuberculosis organizations, often hostile. The established municipal or county institution needs propaganda help toward larger funds and assistance in educational programs.

This is the type of help advocated by the national association for its branches. It should be available. Often it is not. Not content with completely ignoring the established institution, sometimes the branch plagiarizes results, duplicates existent programs with innocuous facsimilies and dummy reproductions and attempts generally to create the impression that the seal-selling organization is the one charged with the actual work, takes all the credit for the work done and capitalizes on this for the sale of Christmas Seals. As a result, the public is confused, and the drive toward the goal is halted.

An interesting decade in tuberculosis history is that from 1930 to 1940. Following the decade of consolidation and organization, it shows new developments, the first and most outstanding of these being acceptance of collapse therapy.

Prior to the present decade the application of collapse therapy was patchy and for the great majority of patients unobtainable. Such as there was, was solely therapeutic in aim; no thought had been given to the public health implications. It was known to cleanse the sputum in many cases and to be practical and

cheap but its full significance as a public health measure was not realized. In view of medical thought the gap was wide. Previous to 1930, the indications for collapse were viewed as narrow and centered largely on the unilateral case and a period of sanatorium residence was considered essential for pneumothorax, but there was inadequate accommodation.

The Municipal Tuberculosis Sanitarium of Chicago pioneered a way across the gap, advocated widespread collapse with public health orientation, and instituted large-scale pneumothorax in the field, from the initial injection onward.

Back in Chicago, in 1931, when Dr. Allen J. Hruby and I came to the sanitarium board, the necessity was urgent, even appalling. Faced with a bed shortage which repeated additions failed to meet with any adequacy, with long waiting lists, hundreds of open cases roaming the streets, the solution was collapse therapy or nothing. We knew that in advocating this we were running counter to medical opinion of the day. We had no recourse.

An encouraging experience of mine in the old Tuberculosis Hospital at Dunning helped to tip the scale in favor of widespread pneumothorax in the field: in 1898 working with Dr. John B. Murphy, without x-ray and manometer, treating patients who rode in and rode away on their bicycles, I saw good results from extramural pneumothorax. Why should it not be practical in 1930 managed by an institution with a twelve hundred bed sanatorium as support and a field staff of 42 physicians and 152 nurses? Realizing the impossibility of sanatorium stay for our patients, we instituted large-scale pneumothorax in the field, hooking it up with an accentuated program of collapse at the sanitarium.

This program is still operative. Most patients started in the field remain in the field; patients started in the sanitarium are continued in the extramural clinic. The occasional case who develops serious complications or who needs a thoracoplasty, is sent to the sanitarium. The results over the period 1931 to date are more than satisfying. The program has grown enormously, 76 per cent of the sanitarium patients are under collapse, 1,624 are under treatment in the field, the field results compare favorably with the sanitarium results, and at the time of our last report, published in 1939, 65.9 per cent of the patients who received their initial injection in the clinic were living, as against 71.4 per cent of those who had a preliminary period of sanatorium stay, accidents and complications in the field work are no more common than those for sanatorium procedure.

Our three bulletins, of each of which 14,000 copies have been distributed, has had a weighty influence in the course of collapse therapy in this country and abroad.

The social or public health indication, previously neglected, has been recognized and the preventive possibilities of collapse have had a full measure of appreciation. Many organizations sent representatives to study the plan and modeled from it a program suitable to the home conditions; others used the plan as presented in the bulletin.

In this collapse work, as in all recent activities of the Municipal Tuberculosis Sanitarium, Dr. Allan J. Hruby, my esteemed colleague, who died November 18, 1939, handled all the organization and liaison work. Dr. Hruby was a life-long tuberculosis man, and joined the sanitarium in 1917, shortly after he completed his interneship at Cook County Hospital. Much of the good in the Chicago program of recent years must be credited to him. He established important tuberculosis contacts with Drs. Jirka, Shahan, Blair, Lindberg, Baxter, B. K. Richardson, and other leaders in Illinois, and was a frequent and welcome guest at the state and county meetings. He liked to exchange his viewpoints with other workers, and used to say, "I like to take something down and bring something back."

In addition to the collapse story other influences have been operative throughout the state. School tuberculin testing programs and health surveys have come in for a large share of attention and are being given extensive trial. Use of tuberculin as an epidemiologic index and as a case-finder has, in the opinion of the writer, been overemphasized.

Regarding the survey of the schools, the question may be summarized by saying that this procedure, seconded by x-ray of the positives, is

productive in the small communities. In Chicago tuberculin testing in the schools has not proved adequate when the expenditures involved are considered; during 1936 to 1939, 167,878 children were tested, of whom 27,401 were positive reactors. From among these and their contacts 531 new cases were found.

In comparison with other procedures, the school program is less fruitful. Case-finding directed toward the more advanced age groups should uncover a larger percentage of contagious disease. In a survey of the occupants of the relief shelters, 70 new cases were found in three days. Today the epidemiologist tends to focus on such groups as relief clients, industrial workers, food handlers and residents of the congested areas. We are rapidly approaching the concept of the total x-ray survey as a practical possibility, little explored but bound to loom large in future preventive work. By the total survey I mean the x-ray examination of every individual in an area of high mortality, in a congested block, a congested square mile, a congested 10 square miles.

A recent development which has made the wholesale x-ray a practicable thing, is the miniature x-ray. Abreu, who developed this process, using the 35 mm. film (about one inch square) can take his films for about 1 cent an exposure. The 4 x 5 inch miniatures, which seem to hold more promise, can be had for about 5 cents an exposure. The cost of the x-ray has been cut ten times. These 4 x 5 inch miniatures, taken off a special fluorescent screen by means of a special lens, are excellent and furnish a satisfactory medium for survey; they may even be used for a large share of routine institutional work. Under ideal circumstances and for average purposes, the 4 x 5 inch miniature is almost as satisfactory as the 14 x 17 inch film.

In the state, and indeed in the country, Dr. D. O. N. Lindberg of Decatur is the pioneer in this miniature x-ray work. Over two years ago the writer read of Abreu's work and on January 14, 1938, wrote for further information. The letter was never answered. Dr. Lindberg went to South America, worked with Abreu, and brought back what there was to be known about this new art of fluorography. Though the present interest in the miniatures and the developments along this line stem largely from his efforts, Dr. Lindberg, like many another pioneer, has received little credit.

From the start he was dissatisfied with the inch square film and advocated a 4 x 5 inch. His suggestions were taken up by one of the large industrial firms and fluorographic units are now being turned out. The lens, a 1.5, made of imported glass, is a delicate product requiring time, patience and skill. The units are difficult to obtain. Our institution, early in the field, has been fortunate in securing 2 units just delivered. One of these cameras, attached to a mobile x-ray unit, will soon be put to work in the Negro districts in a total survey.

Another development centers on anti-tuberculosis vaccination. In this America has notably lagged. The consensus of medical opinion throughout the world is favorable to the procedure and the results seem to justify this opinion.

The Municipal Tuberculosis Sanitarium has, for some years, been interested in the subject of immunization. In 1933 we sent a competent representative to the Pasteur Institute, Dr. Sol Roy Rosenthal, who spent six months there, studied the technical and bacteriological problems and brought the cultures back with him. Since that time he has been working in a special laboratory equipped to provide every possible measure of thoroughness and accuracy. For several years the work was limited to experimental animals and Dr. Rosenthal's research fully corroborated the findings of the foreign workers. Using the multiple puncture method, an excellent innovation in technic developed by Dr. Rosenthal, the work has been extended to children. To date, 560 children from tuberculosis homes have been immunized and an equal number from a similar environment are being watched as controls.

The writer believes that in medical opinion this country in the not distant future will swing to the use of BCG. The efficacy of the vaccination has been established and the possibilities are significant.

These possibilities must be evaluated against the extremely high mortality in the Negro and to the pattern of tuberculosis which this mortality implies. Last year in Chicago, in an estimated Negro population of 250,000, there were 704 tuberculosis deaths, in an estimated white

population of 3,300,000 there were 1,139 tuberculosis deaths. The Negro with 7 per cent of the population accounted for 38 per cent of the deaths. The death rates per 100,000 ran 281.7 for the Negro against 34 for the white.

This extreme disproportion is alarming and casts a shadow over the entire tuberculosis program. The causation is apparently multiple. While allowing a due measure of importance to the conclusions of Long, Pinner and others regarding racial susceptibility and genotypic differences, it is necessary to realize the part played by such considerations as rapid urbanization of the Negro, bad housing, congestion, lowered living standards and wages.

In the decade 1910 to 1920, the Negro population of Chicago rose from 44,145 to 110,512, or 150 per cent. Presumably the majority of these Negroes came from comparatively clear areas in the south. They found shelter in already overcrowded and highly infected districts. The crowding of 66,000 ruralites, many undoubtedly tuberculin negative, into a highly infected milieu, must undoubtedly have a very serious influence.

The present tuberculosis mortality in the Negro parallels the European mortality of over a century ago, when the industrial revolution brought hundreds of thousands of rural dwellers to the city. Eventually through resistance and immunity the situation more or less took care of itself. Apparently Darwin's principle prevailed, that the hardy stock survived and that the survival indicated immunity and that this immunity was handed on.

No public health man would suggest waiting a century for the haphazard and partial amelioration of natural selection. Tuberculosis in the Negro must be fought valiantly in the interest of both races. A fresh sand dune, when it tilts beyond a certain angle, flows into the adjacent territory. The same may be said of tuberculosis. In city life when a mortality in any racial group reaches a certain peak it is bound to spill over into the community as a whole.

The whole question of tuberculosis in the Negro is bound up with economic inferiority and this disadvantage must be rectified in some way before we can hope for any gross betterment in the situation. This is fundamental and its practical realization is outside the province of the public health man. The public health man can preach himself hoarse about the relationship between poverty, congestion and disease. The agencies most vociferous in their criticism of the preventive institutions are most lax in their own province—economic and social welfare. While berating the public health man for a high tuberculosis mortality in the Negro, they refuse to make any movement toward amelioration of the causative conditions.

The public health man should attempt to meet the problem of high tuberculosis mortality in the Negro by larger hospital accommodation, total survey in the congested areas, widespread collapse therapy, increased educational activity, and intensive instruction of the Negro physicians in tuberculosis work. That constitutes our present program.

The total survey and the field post-graduate course are innovations of the early months of 1940. The outlook is fairly good. The mortality rate during the last decade has continued the fall initiated in 1918. The rate last year for Chicago was 51.6 against 52.6 per cent for the previous year, a drop of one point. When will we reach the irreducible minimum, the possibilities of which were discussed by Robertson in 1922 when the rate was 77.5 per 100,000, the lowest on record?

In Chicago, with a death rate from tuberculosis of 34 per 100,000 for the white population, have we reached a basal tuberculosis where gross epidemiologic significance is lost and each case must be fought out on individual lines as one plucks the occasional weed in a large garden? Last year there was a decrease of 58 pulmonary deaths in the white, an increase of 45 in the Negro. Will the Negro mortality spill over? Can the spill be prevented?

These are questions that only tomorrow can answer. Prophecy is hazardous. In the century just passed we have seen epochal progress in tuberculosis control and witnessed an amazing decline in the mortality rates. Notwithstanding the unfavorable highlight in the picture, it seems reasonable to suppose that the favorable trends will continue. The last century was a good one for tuberculosis control. One may guess that the next one will be much better.

THE PHYSICIAN AND THE SOCIAL SERVICE AGENCIES

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Most authoritative of all of the documents on organized activities in social work is the Social Work Year Book, published by the Russell Sage Foundation. The issue for 1939 indicates 48 national governmental organizations whose functions are within or closely related to the field of social work; 370 national and international private or voluntary organizations; 512 public state agencies, and 52 private state agencies, including 42 state welfare conferences and 10 statewide organizations for social welfare planning. Thus welfare work in the United States may be said to have advanced far indeed in the past forty years.

No one knows exactly how many professional and amateur social service workers there are in this country but it is reasonable to believe that the number is in the hundreds of thousands, notwithstanding the fact that the membership in the American Association of Social Workers includes only some 11,000 persons. It must be remembered that the social workers are already highly specialized, including the medical social workers, the psychiatric social workers and those primarily interested in such subjects as adult education, behavior problems, child welfare, and similar specialties. No doubt the extensive entrance by the government into social welfare work has created a vast number of new opportunities for employment in this field far beyond anything available previous to 1932.

The National Conference of Social Work was organized in 1874. It now has a membership of 7,000 persons and meets in special sections devoted to social case work, social group work, community organization, social action, and public welfare administration, with a great number of special committees devoted to certain phases of current interest. When the National Conference met in 1938 more than sixty associated organizations met at the same time, including special groups devoted to birth control, social hygiene, clinical psychology, immigration, family welfare, the Indians, the crippled, legal aid, occupational therapy, volunteers in social work, naturalization, travelers' aid, publicity, and the Spanish democracy. One is almost inclined to hazard a definition for modern social work as being "the interest of a group who believe that everybody's business is their business."

Forty years ago there were no schools in which one could be especially educated for the profession of social work. In the early days there were courses given in so-called "schools of philanthropy." Now, however, since the opportunities have so greatly broadened, there are 36 universities and colleges which give degrees in social work—the oldest of them having been founded in 1911. By 1938 they were enrolling 7,404 students annually, which is about one-third as many social work students as there are medical students in the United States.

Private philanthropy has suffered greatly since the government entered more fully into social work and by increased taxation took over from foundations much of their funds derived from investments and, therefore, much of their opportunity to conduct such work. Medicine has always been the pet of philanthropy. Indeed education, medicine and public health derived (in 1938) $19,000,000 out of a total of $34,000,000 spent by 95 foundations.

The social worker has by many been thought to be primarily desirable as an investigator of family income whose duty should be to determine whether or not the person concerned merited public support of aid and whether or not perhaps some assistance in budgeting the family income and in organizing the family might not make independent many persons who are neither sufficiently intelligent nor desirous to care for themselves. With the development of social service as a profession, however, the duties of the social service worker have broadened and medical social work has become perhaps its leading specialty.

Medical social work was established in the Massachusetts General Hospital (Boston) and in Bellevue Hospital (New York City) in 1905. It is now believed that between 500 and 600 hospitals have social work departments, utilizing full-time as well as part-time workers. There are, moreover, 54 agencies which employ medical

social workers, including relief departments, agencies concerned with blindness, schools of social work, state crippled children's programs, and nine miscellaneous agencies. The American Association of Medical Social Workers has a membership of approximately 1600.

Public assistance, by which is meant governmental aid to needy persons living in their own homes, has now broadened tremendously and thus introduced new work for the social service worker. Public assistance cost approximately $2,700,000,000 during the year ending June 30, 1938.

Unquestionably members of the medical profession were primarily responsible for the creation of medical social work and probably have had much to do with the promotion of all social work. The intimate relationship between environment and disease has caused doctors in the past and in the present to wish to be informed concerning the conditions under which patients live. As medicine moved increasingly from the home into the hospital, it became necessary for the doctor to have some agency to investigate conditions within the home. Moreover, follow-up on the patient after leaving the hospital was necessary in order to aid medical evaluation of new methods and new technics. Here, again, the social service worker served a most useful purpose, assisting the medical profession.

In the meantime, moreover, medicine began to delegate many another medical service to associated agencies, including technicians in the field of physical therapy, the clinical laboratory, the x-ray, anesthesia, dietetics, and similar special services. The development of the hospital introduced a vast personnel associated with the functions of such institutions. Thus today there are about 1,250,000 persons who give their full time to the care of the sick, of whom the medical profession represents about 165,000.

It is not at all surprising then that many of these associated agencies should feel a definite responsibility in relationship to the development of medical service, the provision of medical service, and payment therefor. Inasmuch as the dollar that is spent for medical care must be divided among all of the various agencies which contribute service, the cost of social service must be recognized in relationship to the modern cost of medical care.

From a medical-political point of view the big problem that confronts the medical profession is the decision as to who is to be master in the house of medicine. Someone must take responsibility for the sick. In the past all of this responsibility was carried by the physician who made the ultimate determination as to whether or not the patient should be cared for at home or in the hospital, as to the extent to which the auxiliary services were to be employed, and frequently as to the fees that could be charged, and the manner in which they could be paid. With the increasing attention to the scientific aspects of medical service many a physician has seemed to be willing to delegate all functions—except the immediate care of the sick—to outside agencies. By such delegation he has tended to lose his authority and his control in the care of the sick. Thus it is not surprising to see at this time many movements (in many instances led by persons trained in the field of social work) which would make the physician a mere employee in the development and distribution of medical service, placing administration and direction wholly in the hands of the social worker. Indeed, it has been said by leaders in the field of social work that the doctor has no right to concern himself with any other function except the diagnosis and treatment of disease. It will indeed be a sad day for the practice of medicine should this principle be accepted or should the time arrive when the responsibility and authority for the care of the sick are taken from the physician and placed in the hands of administrators whether they be social service workers or efficiency experts.

The one great principle that must be observed in the care of the sick is mutual responsibility between doctor and patient. It is absolutely necessary to the maintenance of the high quality of medical care. It is absolutely necessary to both patient and physician as independent human beings. Unless physicians realize that they are to maintain their authority and that all of the auxiliary professions and trades which have grown up around medicine must be maintained in the position of auxiliary and accessory rather than dominant in this field, the detriment to the quality of medical service will be immeasurable.

A CENTURY OF OBSTETRICS AND GYNECOLOGY

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The history of medicine is a fair gauge of the history of human knowledge: ages of ignorance and superstition; centuries of slow groping in almost complete darkness; gradual enlightenment in scattered centers of learning here and abroad; a tremendous acceleration in the past hundred years, which shows no signs of slowing down.

Intimate study of individual achievements of the past demonstrates clearly that nearly always, the pronouncements of the Immortals are founded on the previous labors of the unknown. Isolated facts and scattered observations, unheralded and apparently lost, suddenly reappear as brilliant discoveries.

Obstetrics, which is a much older specialty than gynecology, is a register of this age-old and curious process that has led to the present level of attainment.

A century ago our own Oliver Wendell Holmes published his powerful argument on "The Contagiousness of Puerperal Fever" in the New England Quarterly Journal of Medicine and Surgery (April 1843).

All the events so often attending a discovery are exemplified in the story of puerperal fever. Charles White pointed out the essential facts and proved his point with an unbelievably low mortality in his "Treatise" of 1773. It availed him nothing. The profession refused to heed and the midwives were not even aware of the issue. A succession of excellent physicians in England and America confirmed White's observations, but puerperal fever retained its hold.

Following Holmes' publication seventy years later, he was roundly denounced by the two leading specialists in the United States, Charles D. Meigs of Jefferson Medical School and Hugh L. Hodge of the University of Pennsylvania. Puerperal fever retained its hold.

In 1847 Ignaz Semmelweis went through an identical experience. His conclusions and technic saved thousands of lives in Vienna. They won for him the abuse of his seniors and eventually a tragic death. By 1865 he and his predecessors in this crusade had been justified. Puerperal fever was losing its hold.

The development of anesthesia which began a century ago, parallels in many respects the growth of understanding of puerperal infection. Crawford Long demonstrated the use of ether in 1842 in Athens, Georgia. William Morton and John Collins Warren formally employed ether in surgery in 1846 in Boston. The following year James Y. Simpson started the use of chloroform in England; the history of that battle is known to all students of medicine. In the end these two anesthetics became established but not until reputations had been assailed and endless bitterness lived down.

In 1854 Marmoduke Burr Wright published a precise technic for cephalic version. This gradually found acceptance but remains one of the debatable measures in obstetrics.

The era of antiseptics began in 1867 with Joseph Lister whose work laid the foundations of modern obstetric and gynecologic technic. Louis Pasteur, whose experiments ranged from work with silkworms in 1865 to the cure of hydrophobia, gave the necessary impetus to the scientific approach to modern surgical technic.

From this decade on, a group of brilliant clinicians added their individual efforts to the development of obstetrics and gynecology. In 1877 Etienne Stephané Tarnier devised the axis traction forceps. In 1876 Edoardo Porro showed how a cesarean section could be carried out under unfavorable circumstances and result in the complete recovery of the parturient minus her uterus. In 1882 C. S. Saenger demonstrated the possibility of abdominal delivery with repair of the uterine incision and complete functional recovery of the patient.

In 1890 William Halsted added enormously to the safety of all surgical procedures by the introduction of sterilized rubber gloves. In 1895 Wilhelm Konrad Roentgen opened an entirely new approach to our medical problems by discovering the selective penetrating power of the x-ray. In obstetrics the x-ray is gradually winning foothold, and its use is receiving the concentrated attention of innumerable clinics. While its diagnostic and prognostic value in obstetrics is still controversial, there can be no question but that it is a valuable adjunct, and its value may increase. Pelvic roentgenography in gynecology is well established and should be available in every well organized clinic.

The furor created by the American pilgrimage of Kroenig and Gauss in 1916 is well remem-

bered. The twilight sleep which they advocated so forcefully for women in labor struck a sympathetic note among all prospective mothers. This campaign to alleviate the pain of childbirth has resulted in the development of numerous technics employing a great variety of medications administered in various ways, none of which is ideal and uniformly applicable. Future trends in this field will undoubtedly progress to better results.

With all of this activity in obstetrics and its branches, little was accomplished in the development and recognition of our other specialty, gynecology, until the pioneer work which J. Marion Sims carried out from 1845 to 1849. This tireless enthusiast, handicapped by illness, left behind him a life's record which truly justifies his designation as "The Father of Modern Gynecology." The Negress, Anarcha, who submitted to Sims' efforts for surgical repair of her huge vesico-vaginal fistula thirty times before he succeeded, is entitled to a modicum of immortality. The life story of Dr. Sims is more fascinating reading than many of the present day best sellers. Indeed, this may be said of the life stories of all those whose names and deeds were mentioned so sketchily in the foregoing.

Thomas Addis Emmet attained major fame for his work in plastic gynecology in the years following 1868. A pupil of Sims, he carried Sims' work to its real completion. He demonstrated the importance of mobilization of the bladder in fistula work and in addition, developed his own technics for plastic gynecology in general.

In 1872 Robert Battey led the procession of ovariotomists. His and their activities, aimed at the alleviation of innumerable menstrual and nervous disorders by the removal of apparently healthy ovaries, constitute a curious chapter in American gynecology. As the decades went by it came to be recognized that the removal of healthy ovaries by the tens of thousands was not the ideal approach to the ailments for which these operations were performed. It did result in a tremendous increase of information about the diseases of the female genitalia and their relation to the psyche of the women so afflicted.

In 1877 Lawson Tait, whose life was one round of controversy with his colleagues, gave us our first understanding of pelvic infection and its complications. He it was who introduced salpingectomy for diseased uterine tubes, a procedure theretofore unheard of.

It should be understood that during the latter part of the nineteenth century there was a free interchange of physicians between the United States, Great Britain and Continental Europe. The huge women's hospitals of Germany, Austria, England, Ireland and Scotland provided a concentration of material and opportunities for clinical study and autopsy far greater than anything of like nature in the United States. As a result our young medical men found it desirable to finish their studies abroad.

A survey of the medical service available in Illinois must begin with an appreciation of the colonization streams into this area. Illinois was set up as a territory in 1809 and was incorporated into the Union in 1818. Its population then was approximately 12,000. Southern Illinois was settled by colonists from Virginia, Kentucky and Pennsylvania. The only medical service available to these people was furnished by the occasional military surgeon or itinerant doctor. After the Indian Wars and removal of the Indians from Illinois in 1832 there was a tremendous influx of colonists into the central and northern parts of the state, mostly from New England and the Middle States. In 1851 the Illinois Central Railroad was given land grants and helped develop the unity of the state. Obstetrics was part of the work of every physician. Specialization was essentially unknown.

Gradually Chicago assumed its important place in the development of the state. In 1878 a small band of pioneers founded the Chicago Gynecological Society. It is fitting that their names should be recorded here: W. H. Byford, De Laskie Miller, A. Reeves Jackson, . T Davis Fitch, E. O. F. Roler, James H. Etheridge, H. Webster Jones; the associate founders were E. C. Dudley, C. Warrington Earle, H. P. Merriman, D. T. Nelson, H. T. Byford, and E. W. Sawyer.

Thereafter Chicago became an active center in the development of obstetrics and gynecology. It was not until 1897 that O. B. Will of Peoria became the first physician from another part of the state to be accepted as a non-resident member of the Chicago Gynecological Society. As a result the development of obstetrics and gynecology as a specialty in Illinois lagged far behind its growth in the Eastern States where there was a

much greater concentration of population, medical centers, hospitals and physicians.

Nevertheless the stalwarts who carried the torch for Chicago and the surrounding country were in no way inferior to the leaders of these twin specialties elsewhere. The work of William H. Byford deserves special mention. He was the first in this area to write a text on gynecology. He was the first to treat inflammatory conditions of the cervix by cauterization. Thomas Watkins who developed the interposition operation independently of and preceding the work of Wertheim was foremost in the ranks of Chicago gynecologists. Simultaneously E. C. Dudley, J. Clarence Webster, L. E. Frankenthal, Fernand Henrotin, Reuben Peterson and Henry Banga were outstanding practitioners of what was indeed a major specialty.

William Wright Jaggard who shot across the horizon of the Chicago Gynecological Society like a meteor, exemplified the internationalism of medicine. His years of training abroad enabled him, a comparative youth, to cross swords successfully with the seniors of Chicago in obstetrics and gynecology. Joseph B. DeLee, pupil of Jaggard, teacher and brilliant obstetrician, has been an inspiration to students and the profession for years.

The work and teachings of men of science is disseminated in two ways. There are those who are gifted but cannot or will not commit themselves to writing and so must instruct by precept and example. There are others, fluent writers, whose thoughts spread far and wide. In this connection it is timely to quote one of the many wise comments of Henry Banga from whom I learned much. In commenting on the contents of medical journals and texts, he who wrote very little himself used to say, "I do not believe everything I read. Let me see the man and his work and then I will know."

The Illinois Medical Journal was founded in 1899. From that date to the present its volumes have contained a total of 367 articles on obstetric and gynecologis topics. Of this number, 195 were obstetric and 172, gynecologic; 224 were written by Chicagoans, 105 by physicians resident elsewhere in the state and 38 were contributions from physicians outside of Illinois. The authors of 136 of these articles were listed as specialists.

It is natural that this material consisted largely of case reports, personal observations and opinions, and reviews of the literature. A survey of these articles indicates that the Illinois Medical Journal is a forum of self-expression for the physicians who are doing such conscientious work in this state. Original discoveries are rare; but all of us should be familiar with the literature of the past, with the controversial problems of the present and the needs of the future. If then, our sincere and earnest practicing physicians develop definite viewpoints or come across cases particularly illustrative of a phase of a current problem, it is imperative that there be an outlet through which they may express themselves. The Illinois Medical Journal ideally serves this purpose.

SURVEY OF ENDOCRINE PROGRESS

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CHICAGO

Space prohibits more than a brief mention of the high lights of endocrine progress. A chronologic summary of important events in this field is included at the end of this article. However, that gives but a partial picture of the actual steps in our march along this interesting road. One of the most important events is the change in the profession's thinking on this subject which led to the realization that endocrine disorders occur in all fields of medicine and so concern all clinicians.

Twenty-five years ago the term "endocrinology" was almost one of reproach. Endocrinologists were fellows to be viewed with suspicion. Discussions in scientific journals gave the impression that the endocrine glands were hardly an integral part of the body or subject to the laws governing the rest of the body. Some writers attempted to reduce endocrine diagnosis to an absurdity by showing with mathematical calculations the almost incomprehensible number of endocrine dyscrasias possible by combinations of various glandular aberrations. It was said that glandular preparations, except thyroid, were ineffective when given orally and that their hormones, if any, would be destroyed in the process of desiccation or extraction; consequently therapy was futile and probably harmful. The idea, held by many clinicians, that more than one gland might contribute to a clinical picture was regarded as highly unscientific. Finally the physi-

ologists proved that most clinical syndromes are of pluriglandular origin by showing that these structures are so intimately related that functional abnormality in one is usually reflected in others; and so the uniglandular theory was abandoned.

Curiously, the earliest steps in endocrinology were concerned with those phases which later became the target for harshest criticism. Bordeu, perhaps a hundred years before this society was organized, suggested that the male gonads elaborated an internal secretion. In 1849 Berthold transplanted a cock's testes from their orthodox position to another part of the body and noted that they continued to function in their new location. In 1889 Brown-Séquard, who came to be known as the father of endocrinology, published the results of testicular injection experiments carried out on himself. The report attracted a great deal of attention, more perhaps from the quacks than from the regular profession. From that time until scarcely more than ten years ago the odor of quackery hung about any work with the male gonads.

Less than twenty years ago Stanley's careful and extensive report of his work in San Quentin Prison subjected him to ribald jokes. He transplanted testicles from executed prisoners to others who volunteered for the experiment. They reported such improvement in their general health that the demand for this work exceeded the supply of testes. Stanley noted that this procedure had a favorable influence on the acne of boys and the carbohydrate tolerance of diabetics. This was a decade before the advent of the gonadotropic compounds from the urine and elsewhere, which are reported as helpful in acne, and before the influence of estrogenic preparations on pituitary function was shown to reduce the severity of diabetes resulting from pancreatectomy.

Since the chemists produced the synthetic male sex hormone tolerance for reports of good results following its use in a wide range of conditions has swung to the other extreme. It is alleged to be useful in the treatment of all kinds of male and some female endocrinopathies.

Our interest in the pituitary began with Pierre Marie's description of acromegaly in 1886. Study of the physiology and disorders of this gland proceeded slowly until the early 1920's, when reseach workers discovered one hormone after another so rapidly that at one time 10 or more separate hormones were isolated and their functions charted. Now the physiologists feel that the pituitary body elaborates not more than three hormones. No one questions that it exerts a control over the other endocrine glands as stated by Cushing in 1910.

Parry saw his first cases of exophthalmic goiter before 1825. Moebius placed the responsibility for the syndrome on the thryoid in 1886. Kocher removed the thyroid in 1878. Gull described myxedema in 1873 and in 1895 Magnus-Levy showed that the metabolic rate of such patients could be raised to normal by the administration of desiccated thyroid. In 1914, nearly a century after Parry's observations, Kendall isolated thyroxin. In the early years after its discovery clinicians preferred it to desiccated thyroid for therapeutic purposes, but gradually it became evident that thyroxin did not so completely or easily relieve the symptoms of hypothyroidism as did desiccated thyroid and so now very little thyroxin is being used.

Addison described the syndrome that has since born his name in 1855. He was particularly fortunate in seeing so many cases—he reported 11—because it is a rare disease, though it may have occurred more frequently in his time. Tuberculosis, which was more prevalent then than it is nowadays, is responsible for probably 80 per cent. of the cases. In Illinois about 25 deaths a year are reported as due to Addison's disease.

During the World War Cowie and Beaven and others described lesions occurring in the adrenals in connection with flu, pneumonia, malaria and septic processes. In spite of that the syndrome of hypoadrenia of less severe forms than seen in Addison's disease is regarded with suspicion and its diagnosis questioned.

The clinical symptoms of ovarian insufficiency were charted by careful clinical observers and will stand the test of all time. Their relief by ovarian products has been too often demonstrated clinically to warrant the withdrawal of such preparations from the market as is now being discussed. Only in the past five or six years have we recognized that the most disagreeable vasomotor symptoms of the menopause are not due to ovarian insufficiency but to a disturbance of

pituitary and adrenal function, particularly the latter, consequent upon loss of the ovary's inhibiting influence.

Von Mering and Minkowski discovered almost by accident in 1889 that pancreatectomy was followed by diabetes. The idea that a shortage of pancreatic secretion was responsible persisted and gained followers over the next three decades —followers willing to overlook all evidence pointing to the part other organs might play in this syndrome. When Banting isolated insulin in 1922 he further endeared the pancreatic theory to its followers and even research men paid scant attention to this field for several years.

Houssay and Biasotti showed that pancreatectomy does not cause diabetes if it is preceded by removal of the hypophysis. Hyperglycemia and glycosuria have been noted in connection with other conditions and have cleared up when the underlying causes were corrected. Removal of the thyroid has benefited some cases. Irradiation of the pituitary in acromegaly and basophilism has relieved the diabetic syndrome accompanying these pituitary disorders. Young reported the production of diabetes by injections of pituitary extracts. These events have started the search anew and now there is a more open mind on the subject.

Once an idea or a theory is accepted the presentation of data not in accord with it is resented; except for this trait the cause of diabetes would doubtless have been found and perhaps a cure long before this. For more than forty years any evidence that did not support the pancreatic theory of the disease was rejected. The idea that an organ could be so badly diseased as to cause death and yet present no recognizable lesions while fantastic had no effect in casting doubt on the venerable pancreatic theory.

Endocrine literature is voluminous. The relatively few facts of clinical significance are buried in such a mass of abecedarian contributions that the busy practitioner finds it impossible to separate the significant from the theoretical. A journal is needed that would translate the developments into terms of clinical signficance and condense them into readable space. Available endocrine knowledge of importance to the man in general practice is not widely diffused through the profession.

The Association for the Study of the Internal Secretions was founded in 1916. However, it was only a few years until its annual meetings and its journal "Endocrinology" were largely devoted to work on experimental animals, so that many clinicians who looked to this organization and its publication for help in their studies of this phase of medicine no longer support it. Undoubtedly the progress of endocrinology, or at least the spread of clinical knowledge on the subject throughout the profession has been retarded by the policy of the men who have had charge of the organization's affairs.

The whole story of endocrine progress emphasizes the value of clinical observation. The physiologist has continually proved the correctness of the clinican's observation and the incorrectness of his own ideas. This is not said in a spirit of criticism of the physiologist, but to encourage the clinician to record the things that he sees. The frontiers of medicine and particularly of endocrinology are still restricted. They will be extended as the clinician and the physiologist work together.

Pituitary

1884—A pituitary lesion and an enlarged thymus in acromegaly noted by Edwin Klebs of Königsburg, Prussia in autopsy of a case furnished him by Fritsche of Glarus, Switzerland.

1886—Acromegaly described and named by Pierre Marie.

1894—Tamburini described an hypophysial tumor from a case of acromegaly which he recognized as an adenoma of the chromophile elements of the anterior lobe, and insisted that the fact must be of etiological significance.

1908—An experimental pathological reversion to the Fröhlich syndrome, by partial excision of the anterior pituitary in dogs, produced by Cushing.

1910—Cushing concluded that the pituitary gland exerted a control over practically every other gland in the body.

1912—The relation of the pituitary to diabetes insipidus shown by Cushing and associates.

1912—Benedict and Homans showed that the heat production in dogs diminished after hypophysectomy.

1921—H. M. Evans and J. A. Long of the

University of California demonstrated the growth hormone of the anterior pituitary.

1926—P. E. Smith of Stanford University proved that sex development is inhibited by hypophysectomy, while replacement therapy corrects these results.

1927—P. E. Smith showed that removal of the pituitary produces atrophy of the thyroid.

1927—Oliver Kamm and associates announced the discovery and separation of two hormones contained in pituitrin, namely, pitressin and pitocin.

1930—Houssay and his workers showed that if the pituitary is removed, pancreatectomy does not produce diabetes.

1931—Collip separated "an anterior pituitary-like, gonad-stimulating hormone" from human placenta.

1932—Cushing described pituitary basophilism, a syndrome thought due to hyperfunction of the basophilic cells. Similar syndromes have been reported in connection with tumors of the adrenal cortex and cancer of the thymus.

1937—Young reported production of diabetes in experimental animals by injections of anterior pituitary extracts.

1939—The importance of recognizing in the hyperfunction of the anterior lobe of the hypophysis a diabetogenic agent is stressed by Bartelheimer. According to this author, experiments have confirmed the role of the hypophysis in diabetes mellitus and he points to other authors who state that it, together with the adrenal gland, is responsibe for disturbances in the fat metabolism of diabetic patients.

Thyroid

1825—A posthumous account published of 8 cases of exophthalmic goiter, collected by Parry of Bath from 1786 to 1815. He gave first classical account of the disease.

1835—Robert Graves, a Dublin clinician, published a description of exophthalmic goiter, commenting on exophthalmos and palpitation of the heart.

1840—C. A. Basedow of Merseburg published what the Germans regarded as the first classical description of exophthalmic goiter. The three cardinal symptoms—goiter, exophthalmos and increased heart action—are referred to as "the Merseburg triad."

1873-4—Sir William Gull of Colchester, England, reported his observations of loss of hair, thickening and dryness of the skin, and great loss of mental and physical vigor in several middle-aged women, connecting this picture with atrophy of the thyroid. (This condition was named myxedema by W. M. Ord of London in 1877.)

1878—First therapeutic excision of the thyroid by the Swiss surgeon, Theodor Kocher.

1886—Exophthalmic goiter attributed to hypersecretion of thyroid by the German neurologist, P. J. Möbius of Leipzig.

1893—Friedrich Müller showed that the metabolism of patients having exophthalmic goiter is increased.

1895—Magnus-Levy demonstrated that in Gull's disease (myxedema in adults) metabolism was greatly reduced and treatment with desiccated thyroid raised the metabolic rate to normal or above.

1914—Thyroxin in crystalline form separated from the thyroid by E. C. Kendall.

1917—David Marine of Akron, Ohio, began iodine prophylaxis of goiter in school children.

1934—Marine and his associates were able to produce exophthalmos in thyroidless guinea-pigs by administration of extract of the anterior lobe of the pituitary.

Adrenals

1855—A monograph on disease of the adrenals published by Thomas Addison, describing 11 cases of Addison's disease.

1896—Epinephrine isolated by L. Fraenkel of Breslau.

1897—Abel and Crawford isolated an active substance which Abel later obtained in the form of a benzoyl compound having basic characteristics and gave it the name epinephrin.

1901—The active principle was obtained in crystalline form by Takamine (who patented it as adrenalin) and also by Aldrich.

1904—The chemical formula and constitution of adrenaline determined by Jowett.

1919—Autopsies conducted by D. M. Cowie and P. W. Beaven at University of Michigan, on victims of influenza, revealed hypoplasia of the adrenals and evidence of adrenal dysfunction.

1927—F. A. Hartman and associates at University of Buffalo isolated adrenal cortex extract, which they named "cortin," and which prolonged life in adrenalectomized animals.

1929—Pfiffner and Swingle prepared a potent extract of the adrenal cortex.

1930—Rowntree and Greene announced clinical control of Addison's disease with the cortical hormone prepared by Swingle and Pfiffner.

1937—Prior elaboration of extracts of the adrenal cortex in the treatment of patients suffering from Addison's disease, led to the synthetic preparation of esters of desoxycorticosterone (oxyprogesteron) by Reichstein.

Gonads

1722-76—The first lucid theory as to the internal secretions of the gonads was offered by Bordeu.

1849—A. A. Berthold of Gottingen first demonstrated that the gonads elaborate an internal secretion, by transplanting cocks' testes.

1896—The first serious attempts at ovarian therapy were made at the Landau clinic in Berlin, the preparation being fresh ovarian substance from cow or sow fed to women who had been castrated.

1898—Prenant suggested that the corpus luteum furnishes an internal secretion.

1923—E. A. Doisy, E. Allen and coworkers of St. Louis University standardized activity of folliculin, the ovarian hormone from the liquor folliculi of hog ovaries.

1927—L. C. McGee extracted testis hormone.

1928—Ascheim and Zondek discovered gonad-stimulating hormone in the urine of pregnant women, which led to preparation of active extracts from this source.

1930—E. A. Doisy, S. Thayer and C. D. Veler of St. Louis announced the crystalization of the ovarian hormone from the urine of pregnant women, and named it "theelin."

1931—E. A. Doisy and S. A. Thayer of St. Louis University extracted a second estrogenic substance from the urine of pregnant women, calling it "theelol."

1931—Butenandt obtained crystalline androsterone from male urine.

1934—Ruzicka and his coworkers synthesized product from cholesterol identical in its properties and structural formula to crystalline androsterone obtained by Butenandt from human male urine.

1935—Testosterone, a crystalline product from the testis, developed by Professor Ernst Laqueur and his collaborators in Amsterdam.

1936—Kane reported that in 40 cases of repeated spontaneous abortion, treated with progestin and thyroid, 36 living children were born.

1938—An editorial in Am. J. Obst. & Gynec. *36*: 525, 1938 points out that estrogens are available in pure crystalline form as ketohydroxyestrin (theelin) and trihydroxyestrin (theelol). Administration of theelol by mouth is practical and is usually preferred by the patient. Estrogens are absorbed from the vaginal mucosa.

Pancreas

1889—Von Mering of Cologne and Oscar Minkowski of Alexoten, Russia, produced experimental diabetes by pancreatectomy.

1922—Banting and Best isolated insulin.

1923—Banting and Best applied for patents for "insulin" in Canada, the United States and Great Britain, and formally tendered the patents to the University of Toronto.

1924—Seale Harris described hyperinsulinism.

1926—Insulin was obtained in crystalline form from highly purified amorphous preparations by Abel and his associates.

1936—In this and the following years slow-acting insulin has been made available.

Parathyroids

1864—Rudolf Virchow observed and briefly described the parathyroids.

1880—The two external parathyroids discovered and described by Ivar Sandstrom, Swedish anatomist.

1892—Successful transplantation of parathyroids to abdominal wall of cat made by A. von Eiselberg of Vienna.

1922—A. M. Hanson of Faribault, Minnesota, isolated parathyroid hormone.

1924—Experiments of Hanson and later work of Collip demonstrated relation of parathyroids to serum calcium concentration and tetany.

1925—The relation of the parathyroids to tetany was proved.

1926—Mandl reported a case of clinical hyperparathyroidism.

Thymus

1830—Kopp drew attention to fact hyperplastic thymus frequently only pathological condition found in cases of sudden death of infants during attacks of laryngeal stridor, dyspnea, hoarseness, brassy cough and cyanosis.

1934—Using an extract of thymus made by Hanson, Rowntree injected succeeding generations of rats, thereby producing precocity of development.

Function of thymus still not understood.

Pineal

1898—A teratoma of pineal discovered by L. Heubner in autopsy of a case of precocious sexual and somatic development in a boy of 4½ years.

1936—Using Hanson's extract, Rowntree was able to produce precocious dwarfs.

Despite the observation of precocious sexual and physical development associated with some forms of pineal tumor, the function of this gland is not understood.

LITERATURE AND ORGANIZATION

1855—A monograph on disease of the adrenals published by Thomas Addison, describing 11 cases of Addison's disease. He suggests that adrenals, as well as thyroid, thymus and spleen "in some way or other minister to the elaboration of the blood."

1903—C. E. de M. Sajous of Philadelphia published the first comprehensive treatise on "The Internal Secretions and the Principles of Medicine"; Philadelphia, F. A. Davis Company.

1912—Cushing published "The Pituitary Body and Its Disorders."

1913—Thomas Stephenson of Edinburg (assisted by Henry R. Harrower) published the first entire issue of a periodical devoted to endocrinology, Prescriber, April 1913.

1916—The Association for the Study of the Internal Secretions—the first society for the study of the endocrines—was founded and simultaneously Endocrinology, the first periodical of its type, was inaugurated.

1921—C. E. de M. Sajous held the first chair of Applied Endocrinology founded April 30, 1921 in the University of Pennsylvania.

PROGRESS IN RADIOLOGY

Maximilian J. Hubeny, M. D., F. A. C. P., F. A. C. R., and

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The resident who embarks on a course in radiology today, finds on the wall of the well-ordered department of a modern hospital, charts showing kilovoltage, milliamperage, distance and time for each roentgenogram; works under the guidance of a roentgenologist who makes comprehensible the multiplicity of lines and shadows; has at his disposal a library of books which interpret the subject; and can have little conception of the difficulties which beset the exploits of the pioneer radiologist.

About forty-five years ago, when Roentgen discovered "a new kind of ray" the account of its unbelievable properties was received with incredulity. Later, the press ever alert to the subtleties of popular taste, filled the minds of a wondering laity with absurd notions of what was going to happen, once these "wonder rays" were set loose.

Without a notion of how the rays were to be generated, the public got the idea that soon everyone would be surrounded with them, and that all sorts of pocket devices, enabling each man to have a few rays for his own private use, would be on sale; that the rays might spring up from the crevices in the pavement, or pop out from doorways, where prying individuals had secreted themselves to prey upon an unsuspecting populace.

So great was the alarm for a time that in New Jersey an assemblyman introduced a bill "prohibiting the use of x-rays in opera glasses in theaters"; an English firm, fearing for the morals of a nation, advertised a line of women's underwear proof against x-rays.

With this confusion about them, a few physicians set about to understand the new rays, to make practical use of them, to standardize methods of production, and to find out if these rays might on occasion be dangerous.

The men who undertook this quest had no enthusiastic cooperation from those in high places. The conservative and academic element of the profession regarded these experiments warily and repeatedly counseled conservatism and a guarded outlook on the potentialities of anything so nebulous and so little under control as these mysterious rays.

The first demonstrations of the remarkable penetrating power that the rays possessed were stereotyped and consisted usually in photographing some coins in a book, or for an anatomic demonstration a plate was made of the bones of the hand. These plates were not very informative, as compared with those of today, but, was it not almost a miracle to be able to see the bones at all? Soon plates were made of other areas of the body, and the specialty had got off to a start—a halting and hesitant start, that yet demonstrated that x-ray examinations had come to stay.

The present-day intern, accustomed to these films made by exposures of a few seconds, would find unbelievable the procedure necessary in those early days, when even a plate of the hand required one hour's exposure—providing everything went well!

The rays generated then had little current

From the Department of Roentgenology, Cook County Hospital.

volume and were produced with great difficulty. The favorite type of generator was the static machine, which was a part of the table equipment, and was operated by hand. The patient was seated at the table, his hand strapped to the film holder. How else could he hold still so long? The roentgenologist stood beside the table and turned the crank for an hour, and a plate of "bones of the hand" was made—*perhaps!*

A few manufacturers, perhaps fearful of a revolt of the profession against so much labor, put out machines in which batteries replaced the static generator, but were never very reliable as the batteries were apt to run down in the middle of an exposure.

Naturally, the new procedure was early used in trying to determine the presence or absence of pregnancy. Here the difficulties became really formidable. No meager exposure of an hour would do the business now. One man tried it, and not getting much on the plate because of the thickness of the parts to be penetrated, he resolutely made a second attempt, exposing a specially sensitized plate more than an hour. When this was developed, "a faint outline of the trunk of the fetus could be recognized." The fetal head was hidden by the maternal pelvis. Other investigators, trying the same thing, exposed the plate an hour and a half and concluded that the imprint of the fetus on the x-ray plate was a sure sign of fetal death! For though a mother might hold still that long, certainly the fetus could not be induced to do so!

Nor did the skin of patients receiving these long exposures escape unharmed. One physician from a university clinic reported that having "photographed with x-rays" the head of a colleague, the colleague's hair fell out.

Shortened exposure time was receiving pointed interest. The first device of great help was the intensifying screen, which is merely a fluorescent screen, one of which can be placed on each side of the plate or film in the film holder. By the glow which Roentgen rays produce, the action of the emulsion on the film is greatly enhanced and the photographic effect intensified.

The fluoroscope, which suggested the idea for this, was the first device used to demonstrate x-rays, and reached a stage of some perfection earlier than did the making of roentgenograms. The fluoroscope was available to all. The making of plates or films required a great deal of judgment and experience.

Soon after x-rays came into use the fluoroscope underwent a sudden and remarkable improvement through the work of Thomas Alva Edison, who used crystals of calcium tungstate instead of the original barium platino-cyanide. And the screen he developed was about six times brighter than any that had been in use up to that time. Edison was enthusiastic about the clearness of the images one could obtain with this new screen, and considered that roentgenograms could probably be done away with altogether, for he wrote:

"With the fluoroscope, as I have already said, a surgeon should be able to determine in a moment, in case a man has been shot, just where the bullet has lodged, and operate accordingly. There is no reason to take photogrophs, shadowgraphs, or radiographs. I stopped that long ago. You see for yourself, the fluoroscope does the work in a minute."

Edison's enthusiasm was really justifiable in view of the difficulties that attended the making of roentgenograms and the poor results which were often obtained. Now the fluoroscope is never considered comparable with good films for studying detail, but has its own special work, which is to aid in the study of the function of organs. With it one can observe the character of the cardiac behavior, the range of movement of the diaphragm, whether adhesions limit it; the filling and emptying of the duodenal cap, and so on. But the fine alterations in contour and density of structures may escape fluoroscopic observation altogether. When a man gravely pronounces on questions involving the incipient lesions of pulmonary tuberculosis by the fluoroscope alone, with the sort of films which can be made today, one may well question his procedure.

The next advance in the roentgenologist's equipment—a very important advance—was the development of the grid or diaphragm. This was devised by Bucky in Germany and consisted of alternate strips of lead and wood placed very close together, to be interposed between the patient and the film.

For x-rays, to give the maximum sharpness and clearness, should strike the film as nearly as possible in the direction of their incidence. The

reason they would not otherwise do this is that as they pass through the body of the patient they collide with electrons in the atoms of the patient's body tissues; which causes them to shoot out at all sorts of angles, and with all sorts of changed wave lengths. If all of them were to strike the film they would produce a very poor and indistinct image—that is, in those parts of the body which are thick and hard to penetrate.

With the diaphragm in position, no rays which are going at odd angles can pass, for they are filtered out by the parallel strips of lead, and the resulting image is remarkably "cleaned up."

The only drawback to the use of these grids was that the images of the lead strips appeared on the film, and the resulting grating of fine lines sometimes interfered with interpretation.

This difficulty was circumvented in a very ingenious manner. Dr. Hollis E. Potter of Chicago conceived the idea of making the grid move during exposure, so that lines cast by lead strips would be blurred into invisibility. The effect was exactly as had been anticipated. The secondary radiation was removed just as efficiently by the grid, with no trace of the grid's image remaining on the film. This invention was of the greatest importance to all roentgenologists. Without it a great many examinations could not be made and others would give inferior results. Though Dr. Potter's contributions to radiology have been many, if this had been his only one, he would always be remembered for it—the "Potter-Bucky diaphragm."

Tubes underwent revolutionary changes. The first tube, a modified Crookes tube as used by Roentgen, depended for its output of x-rays upon the cathode stream striking the glass walls of the tube. Then came the anode, or focus tube. The cold cathode gas tube utilized the ionization of gas in the tube as a source of electrons and was used until the advent of the Coolidge tube, or hot cathode vacuum tube which was the forerunner of the modern tubes.

The discussion so far has dealt with the use of x-rays in diagnosis. When did physicians begin to use them in treatment?

So far as is known the first treatment of a patient by means of x-rays was given in Chicago, by Dr. Emil Grubbe on January 29, 1896. At the time Dr. Grubbe was suffering from a dermatitis which had come from experimenting with vacuum tubes, of which he was a manufacturer when Roentgen made his discovery. Dr. J. E. Gillman, who treated this deramtitis, sent Dr. Grubbe a patient with carcinoma of the breast, thinking that if the new rays would create such a disturbance in the skin, perhaps they might bring about some change in the growth of the cancer cells. The following day Dr. Grubbe treated a patient for lupus vulgaris.

One of the earliest reports in the literature on the result of x-ray treatment was by Dr. William Allen Pusey, who in 1902 reported on two cases of Hodgkin's disease which he had treated the preceding year. In 1903 Dr. Pusey published, with E. W. Caldwell, a book entitled "The Practical Application of Roentgen Rays in Therapeutics and Diagnosis."

Giving an x-ray treatment then was little like giving one today, for there was no convenient "r" unit for measuring dosage; the output of the tubes was remarkably inconstant, little was understood about the relative penetrability of various wave lengths, and little about depth dosage. Filtration was a virgin field. Dr. George Pfahler made some of the earliest investigations in this subject.

Dr. Pfahler realized that the skin reaction was preventing him from delivering as much radiation at points below the surface as he wished to deliver but the physics of the thing had not yet been brought out. Reasoning logically, he chose the substance most resembling skin to absorb the rays which were damaging the skin, and the first filter was of leather! Today, the specificity of certain metals in absorbing the long, soft rays has been studied, and filters are of metal.

One of the earliest reports on deep therapy came from Dr. Nicholas Senn, in Chicago, who in 1903 published results of the treatment of leukemia by x-rays, demonstrating that the spleen had been decreased in size and the blood picture altered, with marked diminution of the white cells circulating. So far as is known, this was the first time that roentgen therapy was directed at an organ deeply situated, and so deep x-ray therapy may justly be said to have begun with Senn.

There was no standardization of treatment then, and no way to procure it; even if one man knew what sort of exposure would result in an

erythema with his equipment, it was hard for him to hand that information on to another worker, for the tubes varied greatly in output, and kilovoltages showed alarming fluctuations and with many of the installations, when the kilovoltage went up the milliamperage went down. The effect of either of these variations upon the total volume of radiation delivered was not understood. Now, the factors used in the treatment can be set down in a definitive manner, and the actual amount of treatment given can be measured with the "r-meter," so that there is no uncertainty about it, and a patient can be sent from one roentgenologist to another with his treatment record, which will inform anyone exactly what treatment he has had, and how much. We have finally arrived at the "rotentgen prescription" in which we can state that a patient is going to receive "200 r units" of radiation twice a week, and that conveys just as definite an idea as to say that he is going to receive "gr. x" of acetylsalicylic acid at intervals, providing we accompany the statement of "r" units with a basic description of the factors employed.

As apparatus was developed, the hospitals began to consider it a necessary part of their equipment, but some time elapsed before things went smoothly in hospital roentgenographic departments. When asked to go to a hospital to make a special examination, the wise roentgenologist took along an extra tube, since the one in the hospital had probably been rendered useless when various persons pulled switches with more enthusiasm than technical understanding. With the exposure made, the roentgenologist had to take the plates down to his office to develop them, for the hospital usually had no dark room. If the plates did not turn out well enough to be read—with the surgeons, perhaps, waiting to operate—one realized acutely that he had embarked upon a difficult specialty indeed!

The interpretation of those early plates did not proceed as smoothly as is the case today, because all the anatomy had to be worked out, there were no standards of comparison and a lot of it was speculation until enough films had been seen to establish certain lines and shadows as normal.

One of us well remembers an early conference with Dr. P. M. Hickey (whose contributions to radiology need no encomium here), when we came to the joint conclusion that a certain long, dark shadow in the upper thorax, seen in *good* chest films, probably represented the trachea!

The intern of today may think this a far cry, since he is used to hearing people glibly describe minute changes in the arytenoid cartilages, or describe fluoroscopically a lag in a vocal cord. Not that we mention these ultra-refinements in a spirit of unmitigated approbation of their infallibility, either.

In those days everyone had his own notion of interpretation. Our medical and surgical colleagues had a habit of disagreeing sharply with us; but the daily study of films gave us a cumulative knowledge, and above all, a friendly acquaintnace with the normal. If we had to point out that a patient whose neck was in traction only had a cervical spina bifida, the information was not always received with unabated serenity. We could only wait, for we realized that in the beginning we were fondly considered, as Kirklin so aptly put it, as "dignified photographers." We had to put up with it, saying to ourselves, as did Bruckner when they made light of his music —"My time will come!"

The diagnostic work went ahead. Physicians learned all sorts of things about the chest which served to clarify and expedite their diagnoses. Tuberculosis came to be recognized much earlier and entities like lung malignancy began to get some consideration. It is doubtful if, without x-ray films, medical men would ever have had much information about subjects like bronchiectasis.

The chest work went well, but the gastrointestinal work got underway with much difficulty. It was necessary to outline the tract, but it was some time before an opaque meal became routine. In the beginning, the only procedure that suggested itself was to put down an opaque bougie. This showed its own image but gave little information about the esophagus, and was dangerous to some patients. Then tubing loaded with shot was passed into the stomach: bags filled with plumbic acetate were swallowed, and an attempt made to recover them by aspiration; capsules of reduced iron were given.

This was laborious, and gave little information. Then bismuth was tried but only 10 grains were given! It was stated that, in suitable individuals (meaning thin ones), the greater curva-

ture of the stomach could be visualized. About all that was learned was the position of the tract which was considered much more important then than now.

Then came the bismuth meals which gave a bizarre image. Barium mixed with milk was tried, but since milk on reaching the stomach begins to solidify the effect was much as though the patient had had his breakfast before coming for examination. Barium and buttermilk came next, followed by preparations containing a percentage of carbohydrate, which have some nutritive value as well as ability to suspend the barium.

The barium caused trouble too for the first preparations to be used were not always free of sulphide, which is toxic. Nowadays no one need fear barium preparations which are marketed for gastro-intestinal examination.

The gastro-intestinal examination of today is a complete and efficient procedure, with the fluoroscope and serial films each playing its part. They are not regarded as competitive forms of examination. The fluoroscope sometimes gives scanty information in the case of fat patients, but by using a grid in the fluoroscope it may be made to yield more knowledge. One of the postgraduate students at Cook County Hospital remarked, "I can see a deformed bulb, too—when I can see it! I had to come all the way here to find out that my fluoroscope hasn't a grid in it. Now I'm going to buy one, and go back home!"

More difficult to understand is the viewpoint of the individual who fatuously observes, "I can see all right with it, and I can see all right without it." One gathers that the experience of such an individual is limited, or that he has a happy disregard of mucosal relief patterns.

The first explorations into the urologic field had to do with detecting stones. It was soon learned that a large percentage of the stones in the upper tract were calcific or phosphatic, and could be visualized; but in the bladder the calculi were more often composed of urates, and so escaped detection. There were stumbling blocks, here as in gastroenterology, when it came to contrast media. Bismuth, the first that was tried, showed an alarming tendency to stay in the kidney pelves and ureters. After many experiments with silver salts, and others, the present solutions for pyelography were developed.

Contrast media were then being tried in various body cavities. Dr. John Cavanaugh and one of us instilled opaque material into the sphenoidal accessory nasal sinuses. After a considerable trial we abandoned the method, though it has often been revived.

Dental roentgenology virtually put dentistry on a new basis, and cast a new light on the almost universal practice of "treating the nerve." Since that time a great many sufferers have been relieved of various afflictions which devitalization of their teeth, in accordance with the best practices of that day, had brought them.

So many interesting things about the colon were established that our conception of that organ changed materially. It was discovered that a diseased appendix had many interesting roentgen characteristics, and that a typical attack was no longer necessary to convict an appendix of being at the root of much chronic abdominal distress. Diverticulosis of the colon came up for discussion, and in this matter Dr. James T. Case made some outstanding contributions.

In reporting some facts regarding the diaphragm, we were astonished to find how little attention had been paid to this complex and sometimes deceiving structure. A great contribution to knowledge of it came from the work of Dr. E. L. Jenkinson of Chicago.

Roentgenology was becoming a better organized specialty, and societies were formed, though there were few at first to attend their meetings. In Chicago, in the early days, several of us used to meet to compare notes, look at each other's films and discuss procedures, for we felt that we could be mutually helpful in this manner, though we could hardly have a formal meeting with so few members. By inviting certain roentgenologists from nearby cities, we managed to get seven men together every three months. We were off to a start, and later affiliated with the Chicago Medical Society as "The Chicago Roentgen Ray Society."

In 1900 the precursor to the American Roentgen Ray Society was organized. Later that year the society took its present name. Its publication, which finally became The American Journal of Roentgenology and Radium Therapy, had for editors, successively, Preston M. Hickey, James

T. Case, Harry M. Imboden, Arthur C. Christie, and Lawrence Reynolds.

The Radiological Society of North America grew out of the Western Radiologic Society, and its official organ, "Radiology," is now in its twentieth volume. Successive editors were Bundy Allen, A. F. Tyler, M. J. Hubeny, and Leon Menville.

The American College of Radiology was organized in 1923, as an invitational body, and holds annual meetings limited to a dinner and an oration.

The International Congress of Radiology meets every three years in a different county each time. The last meeting was in Chicago, in 1937.

Our meetings are attended by the members of a great many other specialties, for our field is pertinent to almost all of them. The diagnostic aid which radiology renders to orthopedics, for example, would be hard to appraise.

From the delineation of the bones of the hand, the whole study of bone disease had evolved, inseparably bound up with roentgenographic appearances. The greatest service may have been in the diagnosis of bone malignancies. But nutritional disturbances, as rickets and scurvy; congenital syphilis; parathyroid disease; oddities like dyschondroplasia, osteochondro-dystrophy and achondroplasia and mechanical disturbances like spondylolisthesis would all be relegated to the domain of the elusive, without the roentgenogram. Every field has been entered. The otolaryngologist has reduced sinus and mastoid examination to exacting terms. The obstetrician makes abundant use of the information he gains through films.

The science advances, and all sorts of special examinations are undertaken; all sorts of solutions are injected. One should be careful when doing some of the contrast-media examinations involving various organs, with air (which sometimes causes fatalities) but also with some of the special solutions; one should inquire whether a special solution will be excreted, or whether it will remain in the tissues, and if so, what will be its effects?

Some procedures yield much information, and do no harm; others yield a modicum of information and carry grave risks. When shown films which are alike a testimonial to the dexterity and persistence of the investigator, and a happy commentary on the physical hardihood and personal good fortune of the patient, we are tempted to exclaim, "Beautiful! But did you learn enough to compensate that patient for the risk to which you subjected him?" The answer, we suspect, might be ready to hand but unconvincing, as with little Peterkin and his grandfather in Southey's poem:

"But what good came of it at last?"
Quoth little Peterkin.
"Why, that I cannot tell," said he,
"But 'twas a famous victory."

The present so laden with promise and so filled with great expectations, brings the pleasing thought that the young man of today, entering this increasingly useful specialty, may devote his time so much more profitably than could some of us who stormed the first frontiers. If our efforts have aided him, if we have removed from his pathway some of the boulders, bridged over some of the pitfalls, slain a few of the dragons, we are glad. The way is never smooth; the work is never done, but as Goethe reasoned, "one must declare it so when . . . one has done one's best."

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OPHTHALMOLOGY IN ILLINOIS
1840-1940

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The witticism, "Get on—get honor—get honest," with some truth characterizes the progressive stages in the transformation of a primitive community to a center of culture. In 1840, when a preliminary organization of the Illinois State Medical Society was inaugurated, medical conditions in the state were admittedly deplorable.

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Dickens, in his American Notes (1842), described Cairo as a detestable morass. The pioneers found disease an adversary more formidable than nature or the Indians. The settlement maintained itself and multiplied only through the reinforcements of an ever increasing tide of immigration.

I

Get on! Following the Revolution, settlers from the Atlantic seaboard drifted into Illinois, entered in increasing numbers after the War of 1812, and came in hordes when victory in the Black Hawk War forced the Indians west of the Mississippi. The newcomers, almost all descendants of the colonists, poured into Illinois through two great gateways. Through the portal of Chicago came settlers from New York and New England; those from Pennsylvania and the South preferred the southern gateway via the Cumberland Gap, the Ohio and Wabash river valleys. The inhabitants of northern and southern Illinois were separated by a broad belt of uninhabitable marshy bottom-lands. The outstanding diseases of the time were "ophthalmia," pneumonia and malaria. Epidemics of ophthalmia were noted from 1835 (Drake) to 1855 (N. S. Davis). The Illinois Institution for the Education of the Blind was founded in 1849.

Napoleon's campaign in Egypt diffused trachoma through Europe, which crossed the Atlantic and wended westward along the southern path of migration where the warm climate and primitive living conditions favored its spread. Thus originated the trachoma belt of the United States—parts of West Virginia, the Carolinas, Tennessee, Ohio, Indiana, Illinois, Missouri, Oklahoma. Contaminated Indians carried the virus on, and those in the southwestern reservations are now most afflicted. Contrary to popular opinion, trachoma in this country is more of a domestic than an immigrant problem. Of the 60,000 cases extant 25,000 are of Indians and 25,000 of native Americans in the trachoma belt. In Illinois endemic trachoma is confined to the southernmost 17 counties. In 1934 the Governor Horner Trachoma Clinics were inaugurated, thanks to the intercession of Dr. Harry Gradle, the present chief-of-staff of the Illinois Eye and Ear Infirmary. Of an initial appropriation of $10,000 half was derived from the governor's contingent fund for the control of communicable diseases, half donated by the Illinois Society for the Prevention of Blindness. Five trachoma clinics were established approximately 25 miles apart, in Jonesboro, Vienna, Herrin, Eldorado, and Shawneetown; and to these centers a bus service brings patients from 95 neighboring towns. This territory accounts for about 3,500 cases of chronic trachoma, produces 300 new cases annually.

II

Get honor! A century ago the requisites of a medical school were a cadaver, and a few doctors to give didactic lectures. Such education could be given at any crossroads settlement and, with disease rampant, roads poor, and doctors scarce, the country medical school thrived. Before 1837, when Rush Medical College received its charter, some doctors in Quincy, Shawneetown, Galena, Jacksonville and St. Charles taught students with the intention of organizing colleges. The Chicago leaders of medical education, Daniel Brainard and N. S. Davis, themselves graduates of a country medical college at Fairfield, N. Y., so advanced professional teaching standards that the country schools of Illinois, started at St. Charles, Jacksonville and Rock Island, had only an abortive existence.

Modern ophthalmology came into sudden flower in the years 1850 to 1865, like Athena arising full grown from the head of Zeus. The creative genius of Helmholtz, Graefe, Bowman and Donders won for ophthalmology the spotlight of medical and intellectual interest, such as was attained later by bacteriology under Pasteur, Koch, and Lister. Americans flocked to study under Bowman and Critchett in London, under Desmarres and Sichel in Paris, under Donders and Snellen in Holland, under Arlt and Jaeger in Vienna and under the inspired von Grafe in Berlin. Before this period ophthalmology was recognized as but an incidental interest in the routine of general practice. The first course of lectures in ophthalmology was given in America by Henry Williams at Harvard in 1850. In 1855, Elkanah Williams introduced the ophthalmoscope to this country, located in Cincinnati and was the first American to limit his practice exclusively to ophthalmology and otology. Slowly the medical schools established independent departments of ophthalmology and otology—Cincinnati, 1860; Bellevue, 1868;

Rush, 1869; Northwestern, 1870; Harvard, 1871; Pennsylvania, 1872.

At the First International Ophthalmologic Conference held in Brussels in 1857 Dr. Samuel Gross reported that in the interior of the United States eye diseases were neglected or treated by quacks. In Illinois, Chicago was fortunate in attracting two qualified and energetic ophthalmologists, Holmes and Hildreth, both early members of the American Ophthalmological Society organized in 1864, and respectively identified with the beginnings of the Illinois Eye and Ear Infirmary and the Cook County Hospital.

Edward Lorenzo Holmes (1828-1900) was born in Dedham, Mass., graduated from Harvard Medical School in 1854, and interned at Massachusetts General Hospital. After eighteen months study in Paris, Vienna and Berlin, he settled in Chicago and, in May, 1858, with the help of some public spirited citizens, established a one-room eye and ear dispensary, which for some years was largely maintained from his own purse. In July 1864 a two-story wooden building was occupied, and became mostly filled with Civil War soldiers suffering from eye and ear disease—whose care was subsidized by the U. S. Sanitary Commission and the governors of Illinois, Wisconsin and Minnesota. Thereafter the Chicago Eye and Ear Infirmary, as the institution was then called, continued to receive state aid. Since the Illinois constitution of 1870 forbade appropriations to other than state owned institutions, the infirmary changed its name to that now held, became a state institution and moved to enlarged quarters at East Pearson St. The Chicago fire destroyed this building, but none of the patients were injured. In 1872 the infirmary was established at its present site, Holmes remaining at its head almost to the close of his life and achieving his twofold purpose of qualifying the infirmary as a charity for the poor and a school for ophthalmology and otology. In 1859 Holmes became lecturer in ophthalmology and otology at Rush and, after the professorship was established, held the chair from 1869 to 1898, when he retired at the age of 70. The eye staff of the infirmary now has 6 attending, 9 associate, 18 adjunct, 14 extramural ophthalmologists, 6 eye residents and 6 eye interns.

The dispensary handles 100,000 cases annually, and its 200 bed hospital cares for 5,000 patients. An orthoptic department with two technicians in charge averages 16 cases daily. The entrance lobby is fittingly decorated with oil portraits of Dr. and Mrs. Holmes.

Joseph Sullivan Hildreth (1832-70) was born in Cohasset, Mass., graduated from the medical school of the University of Pennsylvania in 1856 and went immediately to Europe, studying under Virchow and Desmarres. In June 1862 Hildreth married Mary Elizabeth Howard of Detroit, daughter of Jacob M. Howard, then U. S. Senator from Michigan. By virtue of this powerful family connection he was summoned to Washington, where he established a hospital for the treatment of Civil War soldiers affected with diseases of the eye and ear. In Chicago the city hospital at Wentworth Avenue and 18th Street was commandeered by the government and opened as an army hospital, Oct. 29, 1862. On Aug. 23, 1864, Hildreth was placed in charge, and with his administration the hospital was renamed the Desmarres Hospital, and occupied exclusively by eye and ear army patients. Following the evacuation by the government the hospital was transferred to the jurisdiction of the county, reopening as the Cook County Hospital Jan. 1, 1866. In its reorganization Hildreth was appointed oculist and aurist, an appointment that was forced on the board by the doctor's political friends. According to Lyman, great indignation was felt, as "it was thought that an eye specialist was out of place in a general hospital, and that every good all-round surgeon was quite competent to treat such cases." In 1868 Hildreth became the first lecturer in ophthalmology and otology at the Chicago Medical College, now Northwestern University Medical School. Because of a tendency to disagreeable ostentation, Hildreth was less popular with his colleagues than his professional merit deserved. He died, aged 38, from an overdose of gelsemin taken for the relief of neuralgia.

A later member of the Cook County Hospital staff, and the first ophthalmologist to Michael Reese Hospital, which opened in 1882, was Daniel Sigismund Jacobsen (1837-1894). Born in Copenhagen, he abandoned the study of Hebrew theology to take his Ph.D. in 1856, and M.D. in 1862 from Copenhagen University After the Schleswig-Holstein War, in which he served as military surgeon, he came to Chicago in 1866 and in the spring of 1871 founded a private eye hospital on Wabash Avenue, which was a few

months later consumed in the great fire. In 1881 he received an honorary degree from Rush Medical College, and in 1887 became the first president of the Scandinavian Medical Society, which he had helped organize. William F. Smith, who followed him as ophthalmic surgeon at Cook County Hospital, was in turn succeeded by Boerne Bettman.

After Holmes and Hildreth the responsibility for teaching ophthalmology passed successively to Hotz and Wilder at Rush, and to S. J. Jones, Henry Gradle and Casey Wood at Northwestern In 1882 the College of Physicians and Surgeons, now University of Illinois Medical School, was organized, with Bettman as the first lecturer in ophthalmology. Later he became professor, having been preceded in the chair by John E. Harper, and succeeded by Casey Wood.

Ferdinand Carl Hotz (1843-1908) came to Chicago from Germany in 1869 with the excellent background of Heidelberg, study under Helmholtz and Knapp, and subsequent postgraduate work under Virchow and Graefe. He succeeded Hildreth as oculist and aurist to Cook County Hospital and became associated with Holmes at the Presbyterian Hospital and the Illinois Charitable Eye and Ear Infirmary. A man of original ideas, he is celebrated for contributions to the plastic surgery of the eye, his favorite field.

Samuel Jones Jones (1836-1901) graduated from the medical school of the University of Pennsylvania in 1860. He forthwith enrolled in the naval medical corps to do his part in the Civil War and was on duty with the Minnesota in its memorable engagement with the Merrimac, March 2, 1862. In 1868 he resigned from the service and proceeded to Europe for study in ophthalmology and otology. He returned to Chicago in 1869, and soon established eye and ear departments at St. Lukes Hospital, Mercy Hospital, and the South Side Free Dispensary. He attained great skill as an ophthalmic surgeon, and occupied the chair at Northwestern from 1870 to 1897, was on the staff of the Illinois Charitable Eye and Ear Infirmary from 1874 to 1882, and edited the *Chicago Medical Journal and Examiner* from 1887 to 1892. His office contained two or three reception rooms for different classes of patients. A bachelor, his hobby was horses, and he never proceeded to a lecture or clinic without his carriage and splendid steeds.

Henry Gradle (1855-1911) arrived in Chicago from Germany at the age of 10. He graduated from Chicago Medical College, now part of Northwestern University, in 1874, interned at Mercy Hospital and then devoted three years to study in Europe. As a disciple of Koch he wrote the first work in English on the germ theory of disease. After assuming the chair of ophthalmology and otology at his alma mater which he held from 1895 to 1906, he composed a three-volume text on Diseases of the Nose, Throat and Ear, which was widely used and even translated into Japanese. Because of his intellectual brilliance and small stature, 5 feet, 1 inch, G. Frank Lydston dubbed him "The Little Giant." He was blessed however with a rugged constitution, and for over thirty years walked daily to and from his office—nearly 2 miles. He died at 55, leaving to Crerar Library a large collection of medical books and a fund for the yearly purchase of journals relating to eye, ear, nose and throat.

Boerne Bettman (1856-1906) was born in Cincinnati, graduated from Miami Medical College there in 1877 and became successively assistant to Elkanah Williams of Cincinnati, Herman Knapp of New York and Otto Becker of Heidelberg. After three years in Europe he settled in Chicago in 1881 and received almost immediate recognition as a skilled operator, becoming surgeon to the Illinois Charitable Eye and Ear Infirmary, oculist and aurist to Cook County and Michael Reese Hospitals. He founded the Chicago Ophthalmological and Otological Society, which continued from 1883 to 1889 with Bettman as secretary.

After a lapse of four years, the Chicago Ophthalmological and Otological Society was revived in 1893, the charter members being E. L. Holmes, president; C P. Pinckard, secretary: S J. Jones, F. C. Hotz, Henry Gradle, B. Bettman, C. H. Beard, Casey A. Wood, W. F. Coleman, W. T. Montgomery, E. J. Gardiner, J. E. Colburn, H. M. Starkey, Lyman Ware, F. D. Stannard, Robert Tilley, G. F. Fiske, and W. A. Fisher The field of eye, ear, nose and throat was originally subdivided in teaching, clinic and practice evenly into eye and ear, nose and throat; but about 1900 there came a general realization that ophthalmology was a full time specialty and

that otology belonged logically to the domain of nose and throat. And as a result of this changed viewpoint, the organization became the Chicago Ophthalmological Society in 1903; and the Chicago Laryngological and Climatological Society, founded in 1899, became in 1905 the Chicago Laryngological and Otological Society.

Among this group of opthalmologists, Charles H. Beard (1855-1916) achieved renown as an artist as well as an artistic surgeon, and excelled equally in fundus drawings and plastic surgery. He was born in Kentucky, and Bardstown in that state is named after his earlier ancestors. At age 14 he lost a foot in a threshing accident, and because of this defect he later abandoned general practice for the specialty of ophthalmology and otology. After a residency at the Manhattan Eye and Ear Infirmary and postgraduate work in Europe, he located in Chicago in 1886 and became attached to the Illinois Charitable Eye and Ear Infirmary. In 1910 appeared his well known text on "Ophthalmic Surgery," adorned by his own lucid and beautiful illustrations.

Until 1912 the annual meetings of the Illinois State Medical Society had no special section on eye, ear, nose and throat, but included these subjects in surgery, surgical specialties and obstetrics. The section on ophthalmology of the American Medical Association was organized in 1879, and has chosen as presidents the following Illinoisans: F. C. Hotz (1887), Casey Wood (1898), Frank Allport (1901), William Wilder (1907), Cassius D. Westcott (1918), George F. Suker (1930). The American Academy of Ophthalmology and Otolaryngology, originally the Western Ophthalmological, Otological, Laryngological and Rhinological Association, was formed in 1896 as a protest against the exclusiveness of the eastern dominated national societies, and offered all qualified men the opportunities of scientific fellowship. The men from Illinois who have achieved its presidency are: J. E. Colburn (1899), W. L. Ballenger (1903), Casey Wood (1906), Otto Stein (1909), George F. Suker (1912), Joseph C. Beck (1915), William H. Wilder (1930), Harry Gradle (1938). In 1940, by curious coincidence, the three national ophthalmologic organizations are headed by Illinois ophthalmologists: E. V. L. Brown (American Ophthalmological Society), Frank Brawley (Academy of Ophthalmology and Otolaryngology), Harry Gradle (Ophthalmologic Section, A. M. A.).

III

Get honest! Opportunity smiled on men of education and ideals, but the charlatans and the untrained also flourished. Ostentatious humbugs, traveling in splendid carriages, "white horses with black men," thrived in the small towns; and in Chicago the daily papers carried blatant advertisements on cut-rates for cross eyes. Flagrant political interference in the professional activities of Cook County Hospital finally resulted happily in the civil service control of both attending and resident staff since 1905. By 1910, of 39 medical colleges established in Illinois, many of them fraudulent, 12 still existed. The subsequent trend toward fewer and better medical schools leaves but 5 today, only 1 of which is not approved by the American Medical Association.

In 1915 10 babies became blind from ophthalmia neonatorum in Chicago. This disaster brought about the formation of the Illinois Society for the Prevention of Blindness, a cooperating lay organization, which successfully promoted passage of the law that made prophylactic use of silver nitrate compulsory and required that gonococcal infection of the eye be immediately reported to the local health authorities. The preventative is now supplied free by the State Department of Public Health, and the prompt report of cases and their proper treatment has effectively controlled this source of blindness. The society was also instrumental in introducing sight-saving classes in Chicago and, since 1933, has helped open similar classes in downstate cities, wherever the number of children with sight defects warranted. As an extension of this program a department has been organized in the Illinois School for the Blind at Jacksonville, for the semi-sighted from the smaller communities.

Attuned to the call for domestic post-graduate instruction, the physicians in control of Henrotin Hospital founded the Chicago Policlinic in 1886. Its first professors of ophthalmology were J. E. Colburn and F. C. Hotz, who were later joined by Holmes and Wilder. A schism in 1888 gave rise to the Post-Graduate Medical School of Chicago, with an eye department represented by W. F. Coleman, Casey Wood, Boerne Bettman, Frances Dickinson and C. P. Pinckard. In 1895 the Post-Graduate school split in turn into

a south side and a west side branch. So popular was such tuition that the Chicago Eye, Ear, Nose and Throat College, incorporated by William A. Fisher in 1897, gave instruction to over 3,000 in its first 25 years. With the evolution of teaching standards the polyclinic course is now considered inadequate basic training for prospective specialists. The newer short courses as sponsored by the Illinois Eye and Ear Infirmary and the Cook County Graduate School of Medicine are designed to aid men established in practice to keep abreast of recent advances.

Wilder in 1908, as chairman of the Section on Ophthalmology, A.M.A., urged the profession to clean house: "It should no longer be possible to be called an oculist after a month or six weeks in a post graduate school." How could optometry be successfully challenged when many men with a medical degree were doing poor work in refraction? The problem as to what could be done was repeatedly discussed. Finally, Edward Jackson of Colorado recalled that in England the credentials from the qualifying examinations of the royal colleges are highly prized, and proposed certification by an American Board of Ophthalmology. The idea turned out so well that similar boards for the other specialties have been created since. Up to May 1, 1939, 1,642 of the 7,200 eye physicians in the United States have victoriously passed the board's increasingly stringent requirements. The certificate has been made a basis for recognition by many Illinois hospitals and the Chicago Ophthalmological Society. Of the facilities in Illinois the board approves the post graduate course in eye at Northwestern University and the eye residencies at 7 hospitals: Cook County, Illinois Eye and Ear Infirmary, Passavant, Reese, Presbyterian, Research and Educational, University of Chicago Clinics.

William Hamlin Wilder (1860-1935), who was the secretary of the American Board of Ophthalmology from its inception in 1917 to his death, could trace his family to a Massachusetts pioneer in 1638. Wilder graduated from the University of Cincinnati in 1884 and, after five years in general practice and three years of European study, moved to Chicago in 1891. At his own expense he equipped the first laboratory of eye pathology in Chicago at the Illinois Charitable Eye and Ear Infirmary. He was professor of opthalmology at Rush Medical College from 1907 to 1925, and in 1935 was awarded the Leslie Dana Medal for outstanding work in the conservation of vision. He recognized the injection of typhoid vaccine as one of the most advantageous forms of foreign protein and popularized its use in ophthalmic therapy.

Casey A. Wood (1856-), a foundation fellow of the American College of Surgeons, educated the profession and the public to the grave dangers of methyl alcohol as a beverage and industrial poison. As an editor, he was responsible for a System of Ophthalmic Therapeutics (1909), a System of Ophthalmic Operations (1911), the seventeen-volume American Encyclopedia of Ophthalmology (1914-1920) and, till 1914, the *American Journal of Ophthalmology*. He contributed a superbly illustrated research on his hobby, the fundus oculi of birds (1917), and since his retirement from active practice twenty years ago has published several masterly translations of medieval classics on the eye, from the Latin and Arabian.

Interest in the relation of focal infection to the eye was awakened by Frank Billings' publications in 1916, and further stimulated by the thorough and extensive clinical analyses of Irons and E. V. L. Brown. A fuller understanding of the biochemistry of the lens has been derived from the contributions of Hektoen and the later laboratory work at Northwestern University and the University of Chicago. Further discussion of the achievements in progress are best left to some future survey, but one may predict that "in the record of the years," many men of today are destined for Illinois' roll of honor.

58 E. Washington St.

A SURVEY OF PEDIATRICS DURING THE PAST 100 YEARS

ISAAC A. ABT, M. D., D. Sc.

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PART I

Modern pediatrics, like internal medicine, had its inception in the medical renaissance in France at the close of the eighteenth and the beginning of the nineteenth century. It is true that one finds in the pages of the ancient and medieval masters descriptions of infantile and childhood diseases, and also some directions for child hygiene and care; nevertheless the systematic study of the problems of health and disease of young

life parallels the progress of modern clinical medicine.

In the English medical literature we find that Walter Harris (1647-1732) wrote De Morbis Acutis Infantum in 1689. In this book Harris wrote that disease in infancy was due to some acid condition of the body and in some speculative and vague way antedated the acidosis theories of our own time. He also treated convulsions of tetany with calcium, sources of which were crab's eyes, oyster shells, burnt ivory and other animal material. Harris's text was popular, and was translated from Latin into English, French and German; it was the authoritative textbook on diseases of children until the publication of Michael Underwood's "Treatise on the Disorders of Childhood" about 100 years later.

William Cadogan (1711-1797) was an early proponent of preventive care of infants, and he considered bad nursing and bad habits responsible for much ill health and for many deaths of children under 5 years of age.

The first children's out-patient department was established in London by George Armstrong (1767). He wrote several essays on diseases most fatal to infants and later a book on the diseases most incident from birth to puberty. He was one of the early proponents of preventive medicine in young life.

The first edition of "Treatise on the Disorders of Childhood" by Michael Underwood (1737-1820) appeared in London in 1784, and the final edition in 1819. This book was highly esteemed, and survived for 62 years as a guide for medical practitioners. In his preface to the 1789 edition Underwood remarks that, interesting and important to society as is this subject, it has been generally regretted by the best writers that this branch of medicine has remained too much uncultivated; and indeed until late years little more was attempted than to get rid of the wild prejudices and anile[1] prescriptions of the old writers, which too often served only to obscure the true nature of children's diseases.

"It is true, indeed," said Underwood, "some laudable attempts have been made of late years to rescue this important trust from being indiscriminately committed to unskilled hands; but it is still to be lamented that even in this liberal age such attempts have not been attended with all the success they have deserved. It cannot therefore be improper that something further should be advanced on the subject, in the hope of silencing the weak objections hitherto made against procuring the best advice as early as possible."

Underwood urged that the supervision of infants and the treatment of their complaints fall to the share of regular practitioners, "to the utter exclusion of illiterate nurses and empirics. . . In neither of these sentiments do I stand alone. Harris, of whose work Sydenham is thought to have spoken so highly, has said the same things."

As to cutting the frenulum of the tongue, Underwood thought this little operation was often requested when there was no occasion for it. He noted that infants had bled to death following the operation. He spoke of the evil of excessive purging and noted that the persistent use of purgatives, a common practice with many physicians, served to keep up catharsis after the cause had been removed, by creating a continual irritation in the bowels. He advised that opiates be prescribed with caution, especially for infants, and cited a case in which a child remained asleep 36 hours after being given 4 drops of laudanum.

Infantile poliomyelitis was first described by Underwood (1784). (Heine described the deformities of poliomyelitis in 1840, considering the disease as a spinal cord lesion.)

Underwood made an inquiry at the British Lying-In Hospital among mothers to ascertain the number of children born and the number that survived. The following is a brief statement of the investigation:

Several women who had borne

3	children had lost as many as	2
4	children had lost as many as	3
5	children had lost as many as	4
6	children had lost as many as	5
7	children had lost as many as	6
8	children had lost as many as	7
9	children had lost as many as	8
10	children had lost as many as	9
11	children had lost as many as	8 and 10
12	children had lost as many as	10 and 11
14	children had lost as many as	11

And several mothers had lost all the children they bore.[2]

At about the same period Neil Rosen von Rosenstein, a Swedish physician (1706-1773) published a work on the diseases of children which was translated into many languages and was considered the most important work of its kind previous to 1800. His chapter on smallpox was outstanding, and he also wrote on diphtheria, worms and whooping cough and other diseases of childhood.

John Cheyne of Edinburg (1777-1836) con-

tributed several chapters on diseases of children to the literature. Starting with the statement that anatomic investigation is the safest foundation for reasoning on the nature of disease, he wrote on the acute diseases and epidemics, and particularly described laryngeal croup, illustrating it by drawings of dissections. In the preface to his second volume on acute hydrocephalus,[3] he stated that he had written on all the diseases peculiar to the period between weaning and puberty, except chorea, which he would not discuss because he had never witnessed in his own practice an autopsy on a fatal case.

Charles Michel Billard (1800-1832), one of the first of the modern pediatricians of France, was guided by the great founders of pathology. While he mentioned his debt to Morgagni (1682-1771), he was more directly influenced by the teachings of Bichat, Corvisart and Laennec. Billard arrived at his cinical conceptions from careful pathological anatomical studies, and thus made important and fundamental contributions to the knowledge of disease in infants and children.

At about this period Alois Bednar, who was studying the diseases of the newborn at the infant asylum in Vienna, made important studies. His book on "Diseases of the Newborn" (1856) contained material gathered at the Vienna Infant Asylum. Bednar felt that he should furnish much-desired information on the disorders of earliest life from his own experience and observed that the greatest difficulty was in the proper treatment of the diseases of this period. On the basis of pathological investigations, the nature of disease was studied, and in many respects the changes were described and the character of the disease revealed. "In order to arrive at similar results with treatment, it will be necessary," said Bednar, "to study fundamentally the various remedies which are employed. It was Sydenham who wished to treat diseases with specific remedies, but very few were discovered." Bednar suggested that one should study the physical and chemical properties of the various remedies, try these on well persons and note symptoms or reactions, taking care that the symptoms produced were not artificial or the result of the observer's imagination. The tested remedies should be applied to the treatment of the sick, making careful observations as to the exact results obtained in a certain number of cases. Bednar evidently had in mind the principles of pharmacological investigation of drugs and other agents, such as are being studied today in modern laboratories by modern methods. Bednar was one of the first to call attention to a murmur elicited by auscultation over the fontanelles or over the cranial sutures of the young infant.

Johann Peter Frank (1745-1821) was the pioneer in hygiene, sanitation and social medicine of Austria, and his reforms in child welfare constituted the first systematic efforts in preventive medicine.

The English pioneer of pediatrics in the nineteenth century was Charles West (1816-1898). West organized the Great Ormond Street Hospital, and published a textbook on obstetrics, as well as a series of lectures on diseases of children. In the introduction to the latter, he said, "It is not without hesitation that I have determined to add to the already numerous courses of lectures which you are called on to attend in your course of studies in medicine. . . However, children will form at least a portion of your practice, and so serious are their diseases that 1 in 5 dies within the year after birth, and 1 in 3 before the fifth year." This stimulating volume on diseases of children was widely read and translated into many languages. West and Edward Heinrich Henoch (1820-1910) of Berlin became warm friends, and indeed Henoch translated West's book on diseases of children into German (1862).

Henoch stands out as the pioneer of modern pediatrics in Germany. It may be said that he established the first pediatric clinic. He was an excellent teacher and clinician, and many of the early American pediatricians attended his clinics and were inspired by his instruction.

Enough has been mentioned to indicate that pediatrics took on an impetus with the development of pathology in France at the beginning of the ninteenth century, and achieved a fresh momentum with the establishment of more precise methods in the diagnosis of disease.

It is interesting to note that when it was proposed to organize a section for diseases of children as a separate branch of the general medical society at a meeting held in Dresden, Germany, in 1868, the section for internal medicine did not approve of this separation. Many of the internists thought then that pediatrics

should be reserved for the chair of general medicine, and that the teaching and hospital practice of pediatrics should be conducted by internists. These views gradually changed. Ultra-conservatism in educational innovations has not infrequently checked human thought and progress.

In American pediatrics before 1800, we find historical details not unlike those recorded in the development of pediatrics in Europe. Epidemics of measles, scarlet fever, influenza and diphtheria were described in pamphlets and journals. Samuel Bard (1742-1821), among other contributions, wrote an inquiry into the nature, cause and cure of the angina suffocativa or diphtheria (1771). It has been said that Bard's article was among the calmest, wisest and most accurate that had been written on diphtheria. Among early contributions may be mentioned the report of a case of congenital stenosis of the pyloris by Hezekiah Beardsley of New Haven (1784). Beardsley observed practically every clinical feature of hypertrophic stenosis of the pyloris as we know it today..

Benjamin Rush (1745-1813) was a hero of the Revolutionary War and a signer of the Declaration of Independence. His medical writings were numerous and cover a wide range, from a treatise on alcohol to a textbook on insanity, but he is of special interest to pediatricians because of his inquiries into the causes and cure of cholera infantum. For this original contribution Rush deserves great credit. In describing the disease he said, "An emaciation occurs to such a degree that the bones come through the skin. Livid spots, convulsions, a strongly marked Hyppocratic countenance, and a sore mouth generally precede the fatal termination of this disease."

Among the early textbooks on diseases of children is that of William Potts Dewees (1768-1841), a resident of Philadelphia, of Swedish extraction. Like Charles West of London, he was the author of books on obstetrics and diseases of children. Dewees's book was widely circulated among American students.

At about the same period John Eberle (1787-1838) wrote a treatise on diseases and physical education of children in Cincinnati (1834).

Modern pediatrics started in America under the direction of Abraham Jacobi (1830-1919). S. S. Adams says of him, "Jacobi pressed the button which set the pediatric clinic in motion." Jacobi was appointed professor of diseases of children at the New York Medical College in 1860. He taught pediatrics in New York City from 1857 to 1899. With the exception of J. Lewis Smith, who was appointed clinical professor of diseases of children at Bellevue Hospital in 1861, Jacobi was the only one engaged exclusively in pediatric practice at that time. Jacobi gave the first bedside instruction in pediatrics in 1862 and this was the first time in America that clinical medicine in any branch was taught at the bedside; thus Jacobi is credited with being the pioneer in this form of clinical instruction.

After Jacobi resigned his teaching position at the College of Physicians and Surgeons, he was succeeded by L. Emmett Holt (1855-1924), who became a forceful leader and teacher in his branch of medicine and whose influence was felt in many quarters.

The department of childhood medicine, having been established in New York, was gradually taken up in other parts of the country. Boston was one of the early centers to interest itself. Its children's hospital was established in 1869 and was one of the first in this country. Pediatrics was not taught in Harvard Medical School until 1871. A few lectures were given on the eruptive fevers, and from 1873 to 1875 Charles P. Putnam was lecturer on diseases of children. Thomas Morgan Rotch gave the first systematic course in pediatrics in 1879, and in 1882 began teaching at the children's hospital.

In Philadelphia Charles D. Meigs (1792-1869) wrote a book "Observations on Certain Diseases of Young Children." His son, John Forsyth Meigs (1818-1882) taught obstetrics at the University of Pennsylvania, and in 1848 published a book on diseases of children which passed through three editions; the fourth was published in collaboration with William Pepper of Philadelphia. Arthur Meigs (1850-1912), grandson of Charles D. Meigs, published a very important contribution on "Milk Analysis and Infant Feeding."

The first record of systematic instruction in pediatrics in Philadelphia is the appointment of Louis Starr as instructor of diseases of children from 1880 to 1884, and professor of diseases of children from 1884 to 1890, in the University of Pennsylvania. He was succeeded by J. P. C. Griffith, who became clinical professor of

pediatrics at the University of Pennsylvania in 1891, and full professor in 1913.

PART II

I shall now attempt to trace the origin and development of infantile disease and pediatric specialization in Illinois. Before giving an account of the personalities and the institutions concerned in the growth of this department of medicine, it seems proper that we should orient ourselves concerning the primitive medical conditions in the state from the beginning of the nineteenth century, and particularly to the prevailing childhood diseases and public health and sanitary practices which prevailed.

Illinois was admitted to the Union in 1818 during the administration of President Monroe. Laennec had only recently perfected the stethoscope and published his treatise on auscultation. Corvisart had described cardiac insufficiency, and Valentine Mott in New York had successfully ligated the innominate artery.

The Indians were living for the most part along the river banks and in the region of Lake Michigan. The white population of 40,000 scattered throughout the state, regarded disease as a greater menace than attacks by the hostile Indians.

So far as is known, the Indians showed a low birth rate and a high death rate, and obviously their population was not augmented by immigration. The Indians claimed that the English brought smallpox, saying, "They gave us smallpox which made our children die."

The white settlers had a high birth rate and a high death rate, and there was an annual increase due to immigration. The mortality for every age was high, though the infant mortality rate led the way.

The entire region had a reputation for unhealthfulness. Malaria was present everywhere. Daniel Drake in one of his famous sanitary observation tours found autumnal, intermittent and remittent fever everywhere in Illinois. He also described the prevalence of milk sickness in the interior valley during the period from 1830 to 1833, and reported that one could not find a single family in which some member had not had a chill or two. In one village every inhabitant except one negro boy was said to have malaria.

Asiatic cholera broke out in 1832 in Illinois and occurred again in epidemic form from 1848 to 1852. Observers of cholera epidemics report that children of all ages are attacked. Newborn infants and children over 5 are equally susceptible; in fact, it is believed that intra-uterine infection occurs. Children are said to be more frequently attacked than adults.

Smallpox epidemics are reported as early as 1837. Typhoid fever became prevalent about 1857, although it may have occurred before and escaped recognition, because the early physicians found it difficult to differentiate it from malaria. During epidemics the incidence of typhoid and smallpox among children has always been recognized to be very high.

Erysipelas was epidemic in 1843 and 1844. Infantile erysipelas was almost invariably fatal.

Nursing sore mouth affected mothers and sometimes nursing babies; it has been suggested that this was scurvy, though there can be no certainty about the matter, since it may have been some form of infective stomatitis.

Diphtheria was described in Illinois records as early as 1855, though the disease may have occurred earlier without having been fully recognized. In 1797 a band of Virginians were supposed to have been virtually annihilated by an epidemic of diphtheria after moving to Illinois. Apparently there was some question about differentiating diphtheria from carlet fever, especially the so-called putrid sore throat which may have been either scarlet fever or diphtheria. The earliest records of diphtheria mortality in Illinois date from 1860, in which year 70 out of 100,000 population died of the disease; in 1880, 122.9 per 100,000 died, and this seems to have been the peak of the diphtheria death rate.

In 1860 the death rate from scarlet fever was 98.7 per 100,000 population. Since 1886 the scarlet fever death rate has gradually diminished, and in 1926 had dropped to 5.7 per 100,000.[4]

Hirsch, the medical historian, tells us that influenza and pneumonia were epidemic in the Mississippi and Ohio valleys in 1807. In 1816 influenza was again pandemic. Drake reports that influenza prevailed in New Orleans and St. Louis and all intervening towns, and an epidemic of pneumonia was reported in Illinois in 1849.

The diarrheal diseases among infants were very prevalent throughout the state during the

pioneer years, particularly during the summertime. From 1843 to 1877 the death rate of young children equaled or exceeded two-thirds of the total deaths at all ages; this was the rate reported for Chicago, and probably it was not materially different in other portions of the state.

L. H. Corr of Carlinville reported in 1879 that one-half the children born in Illinois died before reaching 5 years of age. Michael Mannheimer constructed the table reproduced below showing the ratio of deaths among children less than 5, to all deaths, from 1843 to 1877; the figures for 1925 have been added:

RATIO OF DEATHS AMONG CHILDREN LESS THAN FIVE, TO ALL DEATHS CHICAGO 1843-1877 AND 1925

1843	28.5	1855	44.5	1867	57.5
1844	41.6	1856	52.7	1868	42.2
1845	40	1857	58.5	1869	54.4
1846	33.3	1858	57.3	1870	62.8
1847	37	1859	56.6	1871	70.7
1848	41.6	1860	55.7	1872	45.2
1849	26.3	1861	54.8	1873	59.3
1850	36.7	1862	55	1874	61
1851	42.7	1863	50.7	1875	61.2
1852	33.9	1864	51.4	1876	57
1853	48.5	1865	52.7	1877	56.2
1854	32.9	1866	48.8	1925	17.8

In the earlier years the summer peaks were higher, but in later years declined, and the winter peaks began to appear, the interpretation being that in the earlier years the children died of the diarrheal diseases in the summer, and later of the respiratory diseases in the winter. Fifty years ago infant mortality in Illinois was twice as high as it is now, due to the general prevalence of disease caused by unsanitary conditions and bad hygiene.

In epidemics of pioneer days there was a scarcity of physicians in some districts and the results were often futile, in spite of their best efforts. The training and equipment of physicians varied throughout the country. At the beginning of the nineteenth century there were only four medical schools in the U. S. Some of the students attended college for two terms of one-half year each, others "read medicine" and received instruction from preceptors, who gave them certificates of instruction which qualified them for practice. It is true that some practitioners came with other immigrants from Great Britain and Central Europe and some journeyed with troops from Britain and France.

Physicians were general practitioners. Specialization was practically unknown. While the treatment of disease was primitive and inadequate, diagnosis was being perfected. Vaccination against smallpox was recognized but not widely practiced. Quinine was used for the treatment of malaria. The pioneer physicians struggled manfully and bravely against various epidemics. Not a few of the medical men fell ill and died from the contagious diseases which they were called on to treat.

It is true that detailed facts about disease prevention by sanitation were unknown; nevertheless, the early practitioners urged drainage of swamps and lowlands and sought to obtain a pure water supply, though in spite of their efforts, the water continued to be infected.

Little was known about the sanitation of milk or the protection of dairy products against infection. Contamination of drinking water from improper drainage and sewage was a constant menace to life and health, and the ever present mosquitoes, thriving in the marshlands, caused malarial infections of adults and chidren alike.

Judging by all recorded observations, sickness among infants and children furnished a large proportion of the doctors' patients. It is probably true that there were many fallacies in diagnosis; difficult dentition, intestinal worms, biliousness and many other attempted diagnoses were made to identify disease where no such disorder existed. Some pioneer physicians, confused and discouraged, went so far as to say that small infants were too young to doctor and that vis medicatrix naturae afforded the safest plan of treatment. Perhaps in many instances this was true, especially in view of the heroic treatment with cathartics, emetics, blisters, leeches and venesection, which were in vogue during this period.

While there was a large incidence of infant morbidity and mortality in Illinois from the time of its earliest settlement by the white man, physicians were not inclined to consider diseases of young life as a special branch of medical practice. Sick children were treated by the general practitioner, and medical instruction in diseases of infancy and childhood, such as it was, was appended for the most part to the chair of obstetrics and in some instances to that of general medicine. Only a few lectures were given, and instruction in diseases of children was not separated from the general medical course. In the medical schools of the early nineteenth century it would not have been possible to widen the cur-

riculum so as to include special branches, because the schools gave short courses of only about six months annually over a period of two years.

A number of conditions lead to a closer study of diseases in child life. Under the growing influence of pathology, knowledge of the nature of childhood disorders came to be based in most instances on absolute information instead of speculative or conjectural assumptions. With the advent of modern bacteriology the cause of some of the infectious diseases was revealed, and shortly thereafter deductions were drawn which afforded rational bases for isolation, quarantine and eventually prevention of these diseases.

Pediatrics is one of the youngest of the special branches of medicine. Before the middle of the nineteenth century, children's hospitals had hardly been organized and children's specialists were practically unknown except in a few isolated instances, where they acted as teachers and specialized to a limited extent. Very soon, however, special pediatric societies were organized, chairs of pediatrics were established in the universities and the study and practice of pediatrics took on a new momentum. The study of anatomy and of physiology, and special pathology of childhood received a new impetus. With the advent of bacteriologic studies the gastrointestinal disturbances of childhood were subjected to the closest scrutiny. Escherich of Austria, Lesage and Tissier of France, Booker and Major Sternberg in America and others investigated the role of bacteria in the production of these diseases.

Much valuable information was derived from these contributions, although the results were not always of positive value; but in scientific investigations negative results are important in establishing ultimate truth. It is a fact that the organisms of typhoid, paratyphoid, dysentery and the pyogenic bacteria may produce specific gastrointestinal infections. However, cases of infantile diarrhea are not always due to infectious causes but may be due to injuries produced by food. Nevertheless, the fact remains that during certain seasons of the year and in certain localities, infectious diarrheas cause widespread disaster with a high mortality among infants.

The development of pediatrics in Illinois occurred about the time when special hospital wards or pavilions were first established for the treatment of childhood diseases, and when special instruction in this branch of medicine was introduced into the medical curriculum.

The first mention of instruction in diseases of children in Chicago is found in a note that M. L. Knapp was professor of obstetrics and the diseases of women and children at Rush Medical College, about 1843. Edward Oscar Fitzland Roler (1833-1907) became professor of diseases of women and children at the Chicago Medical College (now Northwestern University Medical School) in 1868; he conformed to the practice of the day by stressing the obstetric side and teaching the diseases of childhood by delivering a few general lectures. Charles Gilman Smith accepted the professorship of diseases of children at the Women's Medical College in 1870, a position which he occupied for several years. He was a popular general practitioner and enjoyed an enviable social position. George Elias Shipman, a homeopathic physician, was one of the first to give children's diseases a prominent place in his practice; he established at his own expense the Chicago Foundlings Home in 1871. James Suydan Knox was appointed lecturer in obstetrics at Rush Medical College in 1873, adjunct professor of obstetrics and diseases of children in 1882 and full professor of obstetrics and diseases of children in 1888.

It is also to be noted that the Chicago Hospital for Women and Children was founded in 1865 under the leadership of Mary Harris Thompson. This is said to have been one of the earliest children's hospitals in America. The first announcement of the hospital stated that it was to be devoted to the care of women and children of the respectable poor. It accommodated 14 patients and was intended chiefly for widows and orphans of the soldiers of the Civil War. This hospital was later named in honor of its founder, the Mary Thompson Hospital, though it is now again known as the Women's and Children's Hospital.

The County Hospital, organized in 1847, occupied various quarters until the present site at Harrison and Wood streets was selected in 1874. A children's ward was set aside in the hospital about 1885 which was known as Ward 13. The main floor of the ward accommodated the older children, while a sort of balcony or mezzanine

floor was reserved for the infants. This section for infants was not particularly well adapted for their welfare or their hygienic care. Cross infections were of common occurrence and there were other defects in the management, as there probably were in similar wards throughout the world. No special precautions were taken for preventing house infections, for securing the proper milk supply, or for its preparation for infant use. I can personally bear witness to the fact that the infantile mortality in this ward was discouragingly high.

During the summertime conditions in the infants' department were particularly bad. In many instances the little patients were admitted in a condition which we designated as marasmus, usually with severe diarrheas; or if they remained in the hospital long enough, they developed diarrhea and marasmus. I recall a severe hot spell when a number of such infants were in the ward. After visiting the infants, I left town for the week-end, and when I returned in a day or two to make my usual call at the hospital, the head nurse informed me that the heat had been too much for the little babies and they had all died; the ward was empty.[5]

About 1890 a special staff of attending physicians was appointed to conduct this ward, and interns were sent from the middler[6] service for a period of three weeks.

The mortality conditions were not different in infant asylums throughout the world. M. Pfaundler, speaking of European conditions, observed that infants were brought into the front door of the hospital with intestinal disturbances and diarrhea, and made their exit from the rear door, having died from marasmus, respiratory complications or other infections. E. Henoch told his successor, Otto Heubner, when the latter assumed charge of the pediatric clinic at the Charite in Berlin, not to open the infants' ward because it could only lead to grief and disaster. It is only since we have learned the importance of aseptic care of infants, the prevention of cross infections, and proper feeding and hygiene, that a considerable degree of success has been attained in well-conducted institutions.

The Children's Memorial Hospital of Chicago was founded in 1884 by Mrs. Julia F. Porter in memory of her son. Originally, it bore the name "The Morris Porter Hospital" and accommodated 30 patients. In 1903 the hospital was reorganized and rebuilt and the name changed to the Children's Memorial Hospital. Several pavilions have been erected since that date, and the hospital now has a capacity of 265 beds, and a large out-patient department. It also accommodates private patients in the Martha Wilson pavilion.[7]

The Durand Hospital for acute contagious diseases was erected in 1912, founded by Harold and Edith McCormick in memory of their son,[8] to care for infectious diseases, particularly those of childhood. Many important investigations were conducted under the direction of the staff of the John McCormick Institute. Unfortunately, this institution closed after the depression of 1930.

The Children's Department of the Michael Reese Hospital was organized as a small ward in 1890, with 12 beds. Eventually, a new department was built, the Sarah Morris Children's Pavilion, erected adjacent to the hospital, with accommodations for about 125 patients.[9]

At about the same time children's wards were established at St. Luke's, Presbyterian and Mercy Hospitals and other institutions. Ambulatory stations were also established in the various hospitals and medical schools.

In 1902 the Chicago Woman's Club inaugurated a movement to provide Chicago with better facilities for sick children, and in the following year the Milk Commission of Chicago was organized and also the Children's Hospital Society. The Chicago Pediatric Society assisted in carrying on infant welfare work in the summers of 1905 and 1906 under the direction of Frank W. Allin. One feature of this work was the conduct of improvised infant welfare stations in tents erected in the poorer sections of the city, where pediatricians selected by the society gave advice to mothers on the care of babies during the hot weather. The Daily News Sanitarium in Lincoln Park also served during the summertime as a babies' day clinic; patients came in the morning and were sent home in the evening.

In 1911 the Infant Welfare Society was reorganized, and new stations were established to instruct mothers in the care and feeding of infants.

Many factors gradually were effective in saving

infant life, such as the improvement in general sanitation and hygiene, better medical knowledge in prevention and treatment of infantile diseases, and the vigorous efforts of the Chicago Health Department.

Perhaps no single factor was more important than the improvement in purification, particularly the pasteurization, of the milk supply.

With improved pediatric instruction in the medical schools in the last years of the nineteenth century, the medical graduates were better prepared to treat infants and young children than previously. The young instructors aspiring for academic honors in the pediatric field read the writings of Jacobi, J. Lewis Smith, Emmet L. Holt, Henry Dwight Chapin, W. P. Northrup and Henry Koplik of New York; Thomas Morgan Rotch of Boston, and Meigs, Louis Starr and J. P. C. Griffith of Philadelphia. Not a few of America's early teachers of pediatrics, especially in the Midwest, studied with Henoch and Baginsky in Berlin, Wiederhoefer in Vienna, Variot and Marfan in Paris, or Charles West and Thomas Barlow in London. The textbooks of Jacobi, Henoch, West, Meigs and Pepper, and J. Lewis Smith were popular with students and practitioners alike. The Archives of Pediatrics made its appearance in 1886, awakening new interest in the subject.

Courses of instruction in pediatrics were established during the 1880's and 1890's at the leading Chicago medical colleges. Marcus P. Hatfield, who had prepared himself in pediatrics under Henoch, was appointed head of the newly organized department of diseases of children at the old Chicago Medical College of Northwestern University in 1881 and served until 1896. He delivered lectures and held a weekly clinic in the amphitheatre of the medical school; he also wrote a compendium on the diseases of children.

Hatfield was assisted in the department by J. C. Cook and C. A. Storey. It appears that Hatfield received the first appointment as distinct professor of pediatrics in any of the Chicago medical schools, though Frank E. Waxham, a founder of the College of Physicians and Surgeons, now the medical school of the University of Illinois, was appointed professor of diseases of children in 1882. Waxham was one of the first to perform O'Dwyer's operation of intubation in Chicago (1885); he wrote papers on this subject and acquired a considerable skill in the operation.

Walter S. Christopher succeeded Frank E. Waxham and became professor of diseases of children at the University of Illinois in 1892. Christopher was very popular as a practitioner and enjoyed an excellent reputation as a teacher. He was also active in civic affairs, serving as a member of the Chicago Board of Education. Christopher and James E. Smedley published some important studies on the physical growth of school children, and the former made many contributions to the literature of pediatrics. He was attending physician at the Children's Memorial Hospital.

Christopher was a colorful personality and, with the imaginative mind of a scientist, he propounded hypotheses and theories and stimulated investigation. He proposed urinary tests for constitutional disorders which in themselves have not stood the test of time; since his day many important additions have been made to our knowledge of urinary chemistry. After his death at 46, Frank B. Earle was appointed his successor and served for a number of years.

Alfred C. Cotton began his career in pediatrics as instructor in the Children's Department of the Central Free Dispensary of Rush Medical College in 1882. Upon the death of J. Suydan Knox in 1892, pediatrics was separated from the department of obstetrics at Rush, and Cotton was appointed to the chair of pediatrics and became attending pediatrician to the Presbyterian Hospital. He wrote a book on diseases of children, as well as a treatise on anatomy, physiology and hygiene of the developmental period. Cotton was a picturesque figure, tall and erect, with long white locks. He had a telling influence on pediatrics of the Midwest in its formative period; he taught large classes of undergraduates, contacted many interns in the hospitals, and was unusually popular with his colleagues, as well as in the medical organizations throughout the state. Among his corps of instructors and assistants may be mentioned Julia Merrill, W. J. Butler, J. W. Vanderslice, Frank S. Churchill, Charles A. Wade and Frank W. Allin.

Charles Warrington Earle (1845-1893) graduated from the Chicago Medical College (now Northwestern University) in 1870. He was one of the organizers of the Women's Medical College and also of the College of Physicians and

Surgeons, where he was professor of obstetrics. Later he became professor of diseases of children in the Women's Medical College. He wrote many interesting case reports for the medical journals and contributed articles for Keating's Cyclopedia of Diseases of Children and also for the American Textbook of Diseases of Children. He was a member and later president of the American Pediatric Society. Earle, like Christopher, was a diligent and enthusiastic worker. He was regarded as a clinician of unusual merit. He was much beloved by his patients and his colleagues, and was respected for his rugged honesty and for the frank expression of his opinions in medical discussions.

John M. Dodson (1859-1933) was appointed professor of pediatrics at Rush Medical College in 1899. He had served as professor of pediatrics at the Northwestern University Women's Medical College from 1894 to 1897. Dodson was a man of sterling qualities. He was keenly interested in the academic side of medicine. For many years he was dean at Rush Medical College; in this capacity, he was the friend and advisor of students, and the inspiration, direction and friendship given to them can never be adequately stated. His contribution to pediatrics consisted largely in planning courses of study and directing the affairs of the department.

With the beginning of the twentieth century pediatrics was recognized as an established branch of medicine. Undergraduate instruction in medical schools has shown marked improvement in character, and in the planning of the curriculum. Chemical and biological investigation in the science of nutrition and the prevention of disease had progressed at a rapid pace, and pediatrics arrived at a recognized position.

There still may be those who think that pediatrics is not a specialty, or that it should have remained an appendage in the division of medical practice. But the fact remains that child health has improved, infant mortality has diminished in civilized countries, and important data have been accumulated concerning the anatomy, physiology, pathology, immunology, prophylaxis and treatment of childhood disorders.

Towards the close of the nineteenth century there were only a few practicing pediatricians. Their number has increased everywhere, and not a few of them have achieved eminence as investigators, teachers and practitioners. I shall mention none of the latter-day men by name, because it would be impossible to include all who deserve special acknowledgment, and also because it is a question whether it is wise to write contemporary history.

From a consideration of all the data that have been accumulated in the various phases of health maintenance as well as disease of childhood, it seems apparent that the existence of pediatrics as a specialty is justified. It is not my thought to overglorify the pediatrician or the specialty or to point exultingly to the progress of pediatrics during the past five or six decades. I fully realize that the advances in our knowledge of childhood health and disease have kept pace with the advances in general medicine and the fundamental sciences, though pediatricians themselves in the last decade or two have been active contributors in the field of metabolism, in the processes of growth and development, infant hygiene and infectious diseases. There are men, not only in this state but throughout the length and breadth of the land, who have devoted their talents and their energies to the advancement of pediatric knowledge. All honor is due those distinguished personalities who have so effectively applied the basic facts of medical science to the preservation of child life and maintenance of health, and to the relief and prevention of childhood disease.

BIBLIOGRAPHY

1. Anile: feeble-minded.

2. Previously, in *Emile* (1762) Jean Jacques Rousseau pointed out that the rate of infant mortality in France was appalling. Of 31,951 children admitted to the Paris Foundling Asylum between 1771 and 1777, 21,476 (80 per cent) died before completing the first year. At the Dublin Foundling Asylum only 45 survived out of 10,272 (99.6 per cent mortality). Sir Hans Sloan said that the rate of mortality of dry nursed to breast-fed infants was as 3 to 1. In the early nineteenth century Marshall Hall said that 7 in 10 dry nursed children died. Underwood in 1784 recommended boiled cow's milk diluted with barley water and added rice, tapioca and semolina to the semi-solid foods.

3. Acute hydrocephalus was undoubtedly tuberculous meningitis.

4. For most of these data we are indebted to Isaac D. Rawlings' "Rise and Fall of Disease in Illinois."

5. The first staff that I can recall was composed of William J. Butler, Frank S. Churchill, Frank Earle, Gottfried Koehler and Isaac A. Abt.

6. Middler: A member of the "middle class" between juniors and seniors.

7. The attending physicians at various times have been Walter S. Christopher, Frank S. Churchill, Samuel J. Walker, George E. Baxter and Joseph Brennemann, the present incumbent.

8. The attending physicians were Ludvig Hektoen, George H. Weaver, Alice Hamilton and George Ruediger.

9. The original medical staff consisted of Ernest Lackner, Frank Cary and Isaac A. Abt.

THE ILLINOIS MEDICAL JOURNAL

HENRY G. OHLS, M. D.
CHICAGO

With the publication of Vol. 48 of the *Transactions* in 1898 ended one era of the Illinois State Medical Society. By that time 630 pages were required to cover the business of the annual meeting and the medical papers presented. Membership in the Society was about 600 and contained representatives of 37 County Societies, 20 City Societies, Clubs and Associations, and 15 District Societies, some of the latter maintaining their organizations independently of the State Society.

Sentiment favoring publication of a Journal had been expressed from time to time since 1886, and at the annual meeting in 1899 at Cairo, it was proposed to "Journalize the *Transactions*" as the American Medical Association had done in July, 1893, and the Pennsylvania Society in 1897. The principal argument, as presented by Dr. G. N. Kreider, was that, whereas there were about 8,000 regular practitioners in the State, the membership in the State Society during the preceding ten years had increased only about 275. As he stated the proposition: "These figures tell better than any words of mine the snail's pace at which we are advancing. Can we not increase our membership by the hundred instead of by the score?"

President T. J. Pitner of Jacksonville appointed the following Committee on Journalizing the Transactions of the Society: Drs. E. P. Cook, John H. Hollister, C. B. Johnson, Carl E. Black and J. W. Pettit.

This Committee recommended "that the method of publishing the *Transactions* be changed and that the publication be called the 'Journal of the Illinois State Medical Society,' the first issue to appear on July 1, 1899, and thereafter on the first of each month."

The report was referred to the Judicial Council with power to act, and the Council authorized the Following Committee on Publication to journalize the transactions for the ensuing year: E. W. Weis, H. N. Moyer and G. N. Kreider. The first and second volumes were issued as Vol. XLIX (New Series, Vol. 1), of which 1,000 copies were printed, and Vol. 1 (New Series, Vol. 2), with 1,400 copies. For Vol. 2, Dr. E. J. Brown replaced Dr. Moyer on the committee.

Vols. 1-5 (July, 1899-May, 1904) each covered a year; since that date each volume included six months only.

Vols. 3-23 were edited by Dr. Kreider, and Vols. 24-35 (July, 1913-June, 1919) were edited by Dr. Clyde D. Pence with Dr. Henry G. Ohls as Managing Editor. Vols. 36 to date were edited by Dr. Charles J. Whalen with Dr. Ohls as Managing Editor.

Under Dr. Kreider the office of publication was Springfield, where Vols. 1-8 were printed. Vols. 9-23 were printed by the A.M.A. press; and, during the remainder of Dr. Kreider's editorship the edition was shipped by freight to Springfield and mailed there. Since October, 1913, the *Journal* has been printed by Rogers and Hall and their successor, Printing Products Corporation (May, 1921). Chicago was the office of the publication when Dr. Pence was editor. When Dr. Whalen became editor, Dr. J. W. Van Derslice was appointed Secretary of the Publication Committee by the Council. The office of publication remained in Oak Park after the secretaryship was taken over by Harry J. Stewart.

Seventy-six volumes have been published to December, 1939. When a count was made in 1928, it was found that the 52 volumes to December, 1927, contained 30,168 pages, exclusive of advertisements (more than the proverbial four-foot shelf!

Since January, 1923, the editorial section has occupied the first reader position.

As above stated, the primary purpose in establishing the *Journal* was to increase the membership in the State Medical Society. As the first issue was limited to 1,000 copies, the Editorial Committee felt that the copies might become very valuable in the course of time and issued a warning to "preserve the *Journal.*"

Under "Correspondence" also, Dr. Carl E. Black approved the *Journal* project, made valuable suggestions as to its contents and arrangement, and proposed further that an active canvass of medical men be made in the State to solicit membership in the Society.

1899—Of the numerous valuable historical contributions appearing in the *Journal,* Vol. 1 (August, 1899) reproduced the list of officers and places of meeting of the State Society from the beginning (1850-1899).

1900—Vol. 2 (June, 1900) contained a fine group photograph of the "Fathers," as follows: L. G. Thompson, Lacon, aged 79; J. T. Stew-

art, Peoria, aged 76; Robert Boal, Lacon, aged 94; N. S. Davis, Chicago, aged 84; F. R. Pitner, Clay City, aged 88 (Fig.).

1901—In June, 1901, also appears a group, "Concilium Judiciale Societatis," 1900-1901, with the following: J. L. Reat, Tuscola; Carl E. Black, Jacksonville; D. W. Graham, Chicago; J. F. Percy, Galesburg; E. P. Cook, Mendota; H. C. Mitchell, Carbondale; O. B. Will, Peoria; L. J. Harvey, Griggsville; W. O. Ensign, Rutland. (Fig.).

That the publicity secured through the *Journal* had an immediate effect on membership is attested in August, 1901, in a report of Dr. E. F. Baker to Morgan County Society: "There is no question in my mind that the new departure of publishing the *Journal* has been in a large measure instrumental in awakening the increased interest that is seen throughout the State in the Illinois State Medical Society. I think it is something every physician of Illinois has reason to feel proud of."

1903—Again, in July, 1903, Dr. Kreider at the annual meeting, said: "The *Journal* has had a steady growth and increased influence, and I believe it is now universally conceded that the *Journal* is a vast improvement on the previously issued annual report volume of transactions. Owing to the anticipated change in the constitution which has been consummated at this meeting by which each member of a local society pays dues through his secretary and thereby obtains the *Journal,* there has been no active canvass of the State for the purpose of increasing our subscription list."

1904—Volume 6 (July, 1904) contained an obituary of Dr. N. S. Davis, "In Memorium Patris Societatorum." The sentiment was better than the Latin title.

Dr. Kreider tendered his resignation as editor in 1904, but, at the request of the Council, consented to resume the responsibility.

The Journal Committee, Drs. Black, Harris and Will, was authorized to use its own judgment during the interim of Council meetings in enhancing the interests of the *Journal.*

1907—In January, 1907, the Council adopted the rules of the A. M. A. Council on Pharmacy and Chemistry in accepting advertisements and exhibits which limited the field and cut down the income from advertisements (Vol. 12).

1908—Volume 14 began the custom of publishing the portrait of the President of the Society (Dr. Pettit, 1908-1909) as a supplement.

Among the controversial subjects that drew the editorial fire at that period was the state of medical education in Illinois; and the Philippics of the editor caused Dr. James A. Egan, Secretary of the State Board of Health, to devote more than one issue of the Bulletin to "rebuttal and avoidance." Indeed, the discussion on education became so voluminous and acrimonious that the House of Delegates refused to publish it (Vol. 24).

1909—Since Dr. Baxter spent six months in Europe in 1909 I have been on the Journal staff: 27 years as managing editor.

1913—In the last report of Dr. Kreider as editor at the annual meeting (1913), he traced the growth of the *Journal* from a pamphlet of 48 pages, without ads and a circulation of 500, to 120 pages of reading matter, 20-30 pages of advertisements and a circulation of 6,100! Since 1901 all expenses of the executive officers had been paid, and an Index of the first 49 years of the Society's Transactions, edited by Dr. Carl E. Black, was published in June, 1913.

1914—An outstanding example of enterprise during the editorship of Dr. Clyde D. Pence was the publication (October, 1914) of the Proceedings of the Alienists and Neurologists of the United States at the July meeting in that year. That issue carried 266 reader pages.

Another feature of the *Journal* of that period was a section, "Auto Sparks and Kicks," which was run in a campaign to increase and diversify the advertisement section. To this end also the rates for advertising space were increased 50 per cent. and the section to 40 pages.

1916—In 1916 the Tri-State District Medical Society held its first meeting at Freeport, and for several years the *Journal* published many papers read at its meetings and its successor's, the Inter-State Post-Graduate Assembly of North America.

1919—In June, 1919, Dr. Charles J. Whalen was elected editor, and Dr. Henry G. Ohls was re-elected Managing Editor. Under the editorship of Dr. Whalen, the *Journal* has become the outstanding champion of the Medical profession in its economic contacts.

1922—Thus, in July, 1922, were collected

some of the subjects that had been subjected to his critical dissection:

1. The Sheppard-Towner Bill.
2. State Medicine.
3. Health Centers.
4. Workmen's Compensation.
5. Group Medicine.
6. Compulsory Health Insurance.
7. The Nurse.
8. Physicians' Fees in Pay Clinics.
9. Indiscriminate Free Clinics.
10. Free Hospitalization.

1923—A year later (July, 1923) the editor's principles had expanded:

Journal opposes:

1. Lay dictation of medical practice, either by legislation, endowment or foundation.
2. State Medicine.
3. Federal Aid.
4. Overtrained Nurse.
5. Compulsory Health Insurance.
6. Workmen's Compensation.
7. Free Hospitalization and Free Clinics.
8. Russian Ideas in American Homes.
9. Sheppard-Towner Act.

Journal favors:

1. Lay education.
2. Cooperation among County Societies.
3. Extending organization among physicians.
4. Faith in future of medicine and the rank and file.
5. Adequate pay for adequate service.
6. America for American ideals of cleanliness, freedom and democracy.
7. Commemoration of 75th anniversary of State Society in 1925.
8. Invasion of public affairs, especially political field, by medical profession.
9. Loyalty to the ideals that have advanced medicine to the front of progressive sciences.

1924—In July, 1924:

1. All persons who attempt to diagnose and treat human ailments shall stand equal before the law.
2. All shall submit to the same license requirements on the point of fundamental or preliminary educational standards.
3. Examination by one board only.
4. State law shall deny license until these principles are complied with.

1926—In July, 1926, the editor credits the Lay Education Committee with the following functions (Report of Dr. H. M. Camp, Secretary):

1. To teach the meaning and necessity of the single standard of medical education.
2. To teach preventive medicine toward which periodical health examinations, medical and dental, is greatest single step.
3. To achieve efficient teamwork in health programs with all interested agencies.
4. To establish scientific medical leadership in all lay movements for health.
5. To hold back State medicine through component societies assuming responsibility for public health.

The unexampled increase in the circulation of the *Journal* and the demand for reprints of the economic editorials indicates that the editorial policies make a wide appeal.

1927—The masterly analysis of the United States Bureau of the Census statistics on infant mortality and maternal mortality (January, 1927, pages 14-24), demonstrating that the States rejecting Sheppard-Towner cooperation had an average lower mortality than the States that accepted the Government grants in 1924, also proved the wisdom of the editorial policy of opposition to that law.

The *Journal* for 1927 also noted the increased activity of the Women's Auxiliary under the presidency of Mrs. G. Henry Mundt, and the appointment of Miss McArthur as Secretary of the Education Committee.

At the Past President's Night, on the initiative of Dr. Camp, the 13 past presidents were presented with diplomas.

1928—This year saw the revival of the American Medical Editors' Association. Through its columns the *Journal* emphasized the service to the doctor of the State and County Society.

1929—The *Journal* condemned:

1. Lay dictation of medicine and pay clinics.
2. Newton Bill.
3. The anti-vivisection bill about to be introduced into the Legislature.
4. Character of the service at the Public Health Institute.
5. Socialized medicine.
6. Personnel of the President's Committee on the Health of children.

Dr. Reed, president of the Chicago Medical Society and treasurer of the Chicago Gynecol-

ogy Society for 25 years, was honored at a dinner.

1930—In this issue the *Journal* pointed out that a federal narcotic dictator and narcotic legislation were not needed.

Dr. Zeuch was the subject of an article on "Doctors who achieved fame," and the appointment of Dr. Cutter as permanent historian was mentioned.

An article by Chesterton on State Medicine denounced the panel system.

1931-32—For the first time the *Journal* used boldface type in its editorial heads.

Protests were made against government dictation, questionable maternity statistics and installment financing.

Chicago was proclaimed world medical center.

1933—In 1933 the death of Dr. Van Derslice occurred and Dr. Stewart became secretary of the Publication Committee of the *Journal.*

1935—This year continued the affirmation of the previous *Journal* that corporations cannot practice medicine and protested lay attacks on the medical profession along economic lines. More than one article emphasized that European ideas of medicine were better not imported.

1937—Health insurance, old age security and New Deal tampering with health were the main topics dealt with by the *Journal.*

The honorarium for Dr. Reed was mentioned.

"Pharmacy in 1859" carried the reader back to the early days of the Society.

1938—This issue noted the House of Delegates: 50-year Club.

1939—Federal action against the A. M. A. was the subject of several articles. The *Journal* continued its campaign against socialized medicine.

As the official organ of the Illinois State Medical Society, the *Journal* has published the proceedings of the annual meetings of the Society, and the addresses and other papers read at the annual sessions, as well as papers read at the meetings of the component societies. In addition, it has been the medium of publication of many papers of exceptional value, contributed by distinguished members of the profession from other states.

For several years the proceedings of the Chicago Ophthalmological and Laryngological Societies were published, but the demand for space in the *Journal* became so great that the publication of these papers was discontinued.

That the *Journal,* in cooperation with the Legislative Committee, has been a factor in controlling legislation affecting the medical profession, is demonstrated at every session of the Legislature.

The *Journal* of July, 1927 contained a summary of the evils against which its editor has crusaded and the causes for which the *Journal* was fighting and is still fighting. Among the evils listed are:

1. Attempts by Congress and State legislatures to dictate therapeutic procedures. Diagnosis, dosage and demand should be regulated by scientific judgment in all its flexibility rather than by inflexible, legislative statute.

2. Attempts by lay organizations and individuals, and by capitalistic foundations to effect arbitrary control and supervision of disease, and of the sick and ailing to the elimination of the physician as an individual, or as a unit in a purely scientific society, such as a city or county or state medical society or its divisional.

3. Attempts at fiat legislation that interfere in any way with the proper practice of medicine.

4. Attempts by politicians, misguided, ignorant or malicious, as the tools of cults, quacks or charlatans, to write upon the statute books of any state, county or city, legislation that will permit any impostor to enter the practice of medicine or in any way to assume care of the sick or ailing.

5. Attempts by corporations to act as intermediaries between physician and patient and thus eliminate the benefits to the patient of a direct contact with the medical advisor.

6. Attempts through various agencies to take from the hands of the family physicians, aided if necessary by a local specialist, the requisite periodic health examination.

7. Attempts to effect an indirect medical service anywhere and in any way through a third party.

8. Attempts to install an over-centralization of medical authority with all the dangers and destructive influences attendant upon such non-American bureaucracy.

9. Attempts to create a federal despotism or

a modified soviet with socialization of medicine the touchstone for this calamity.

The causes which the *Journal* is fighting for:

1. Defense of the medical profession from emotional villification from misguided individuals in the profession and from ignorant individuals of the general public.

2. Protection of the profession from misleading opinions engendered in the public mind through unfair, untruthful, and bombastic newspaper publicity attained on the part of certain members of the profession from time to time.

3. Restoration of the rank and ranks of the family physician, that fundamental factor in the practice of medicine, and that has unfortunately suffered temporary displacement through the enthusiastic if not altogether balanced rush for specialization that has, through no precise fault of the doctors themselves, permitted a specious foothold for cults in the chasm between the service of the specialists and the average service afforded by the average modern general practitioners.

4. Realization on the part of both mature doctor, recent graduate and undergraduate student that the general public is demanding increasingly a punctilious service for those comparatively trivial ailments that comprise the bulk of human ailments and that proffer fertile mediums for the increase of charlatanism.

The favorable condition of the medical profession in the matter of law and public estimation in Illinois, as compared with other states where the profession is not so well organized, may be attributed largely to the policies of the *Journal* in cooperation with the excellent work of the various officials and committees of the Illinois State Medical Society.

The ILLINOIS MEDICAL JOURNAL was the first medical publication to carry the propaganda showing the dangers of state dictation and control of medicine. Moreover, the present editor through the columns of the *Journal* was the first doctor in America to call attention to over-centralization of government and to the menace of Compulsory Health Insurance, State Medicine and allied dangers.

The same spirit which led that small group of men gathered in Springfield in June, 1840, to declare that they were willing to place themselves before the public on their true merits without "the protection of legal enactment" to sustain them has been reflected in the pioneer efforts of the Illinois State Medical Society through the *Journal* to foster and maintain the profession as an individual entity in 1940.

THE EDUCATIONAL COMMITTEE ITS ORIGIN AND WORK

JEAN MCARTHUR

CHICAGO

Thirty-two years ago the Illinois State Medical Society considered inaugurating a program of health education for the laity but decided that the time was not ripe. Instead, the Society organized a lecture bureau for county societies similar to the present Scientific Service Committee.

Even a few years prior to the organization of the Lay Educational Committee, a physician who spoke to a lay group on medical subjects was apt to be unkindly criticized. However, professional opinion underwent considerable change, and in 1922 the House of Delegates passed a resolution introduced by Dr. Charles J. Whalen to "go on record as endorsing a broad plan of publicity through pamphlets, addresses and the lay press, any or all, to the end that the public be enlightened on the truths and principles contained in the development, progress and present status of medicine in order to counteract the propaganda of many sects who claimed superiority in methods of healing."

At the September 1922 meeting of the Council a committee was appointed consisting of Doctors Charles J. Whalen, R. R. Ferguson and William D. Chapman. No instructions were given as to how the committee should function, nor were any funds placed at its disposal. It was to be known as the Lay Educational Committee. Its object was to make the doctor and the public better acquainted and to present him in a more favorable light before the public.

During the first year money was collected by voluntary contributions, the average contribution being $10 per member. In this way about $12,000 was collected and at once the committee was besieged by various persons with sundry plans for accomplishing all the objectives at a cost exactly equal to the committee's funds. Most of these were agencies which

wanted to do the work entirely through the press. None of their plans were adopted.

In 1923, Mr. Jaklon was appointed director of this work, and Dr. James H. Hutton was added to the committee. After three months' trial, however, the ideas which he advanced were abandoned as unsatisfactory, largely because of the difficulty in gaining the doctors' interest and cooperation and in interpreting accurately their point of view by turning out news matter of academic interest from a central bureau.

In March 1924, Miss Carrol Keller was employed as a full-time secretary and Dr. James H. Hutton became chairman. The personnel remained unchanged for the first decade of the committee's existence.

By the end of the second year a fairly definite program had been planned and the money voluntarily collected had been exhausted. Since then expenses have been met by regular appropriations, varying from $14,381.53 in the year 1926-27 to $8,351.86 in 1936-37 and $12,000 in 1939-40.

During the early days about one-third of the committee's money and energy was expended in post-graduate education for members of the Illinois State Medical Society. It became evident that the profession needed quite as much educating in some respects as did the laity and so at a meeting in Moline, January, 1927, the name of the committee was changed to the Educational Committee. The Scientific Service Committee was organized as a sub-committee in September, 1926, to supply speakers to county societies on request. It has always been the policy to pay the expenses of the speakers scheduled to address county medical societies.

In March 1927 Miss Jean McArthur came to the committee as the secretary with Doctor R. R. Ferguson serving as chairman, an office he has held the past thirteen years.

The county society has always been regarded by the committee as the sole judge of its activities in any county. The county societies used or failed to use the various facilities as they wished. But every county has used its services.

Cooperating with various lay organizations has been one of the committee's most important contributions to organized medicine. Groups that were formerly suspicious, if not actively antagonistic, have become our friends and perhaps our change of attitude has been as great as has theirs. This change has been brought about by friendly informal talks. The Illinois Federation of Women's Clubs was back of the Illinois State Medical Society in opposing the Sheppard-Towner Bill. They gave their assistance also when the antivivisectionists proposed certain measures before the legislature in 1929.

The Illinois Congress of Parents and Teachers has been given support in the last 13 years in plans and promotion of the Summer Round-Up. The Chicago Board of Health incorporated the reports of the Educational Committee in compiling statistics to be entered in the annual city health contest sponsored by the United States Chamber of Commerce. The committee contributed to the Maternal Hygiene Exhibit sponsored by the Medical Dental and Allied Science Women at A Century of Progress, this exhibit was later given to the Rosenwald Industrial Museum of Chicago where it is on display.

A series of lectures was given before groups of 200 to 400 men and boys in the various transient homes of the Cook County Service Bureau in connection with the Illinois Emergency Relief in 1934. The committee cooperated with the Chicago Woman's Club in its special cancer and hay fever projects. In 1937, the Chicago Rotary Club and the Chicago Chamber of Commerce carried on an experiment in vocational guidance for a selected group of 50 young men of the North Park College. Panel discussions were held by prominent manufacturers, the bar association, retail merchants and others. Through the Educational Committee the Society was invited to present a discussion on "Vocational Outlook for Youth In Medicine." The program was followed by a tour of Cook County Hospital. It was a huge success.

The committee has worked with the home bureau units of the state, with the Illinois State Nurses Association, the American Red Cross, the W.P.A., the American Legion and its auxiliaries and scores of other groups covering the entire state.

When the Committee was first appointed a great many organizations were doing some type of health work. There was no coordination and

consequently there was considerable overlapping. This body has helped to bring some order into this field so that there is now less duplication of service.

Wherever a lay group has desired to undertake any health activity, we have sought to place them in touch with the officers and members of the local county society with the idea first, of avoiding friction and second, of keeping these activities in proper and useful channels. If a request is made by any organization for cooperation, the approbation of the local county medical society must be obtained before the committee feels free to act. It functions as a liaison medium between the medical profession and the public.

During the life of the committee there has been a notable reduction in infant mortality in Illinois. The reduction has been greater in Illinois which did not accept Sheppard-Towner money, than in neighboring states which did accept this money.

The work of the committee may be classified under six distinct headings, Speakers Bureau, Radio, Press Material, General Health Education Service, Cooperating Organizations, Scientific Service Committee.

The Speakers' Bureau has been widely used in all sections of the state. Starting in a small way, the committee is now able through the fine cooperation of members of the Illinois State Medical Society, to schedule as many as 600 appointments a year. All speaking appointments before lay audiences are filled by members of the Illinois State Medical Society. Special programs have been arranged to celebrate American Education Week, Health Week, Youth Week. Many talks have been given on state medicine. Speakers have participated in forums and in debates on the subject.

During the two years of the Century of Progress, the committee was responsible for daily health lectures in the Hall of Science. Mr. Rufus Dawes sent the following message, "The almost daily public lectures by members of the Chicago Medical Society have been a valuable support to the policy of the Century of Progress to give sound information upon medical topics to its visitors." Thousands and thousands of people heard these illustrated popular health talks.

The year 1935 brought to a prominent place the subject of vivisection. The committee endeavored to lend its support to the medical scientists in presenting true information concerning the laboratories and the results of animal experimentation. Through the committee it was possible to arrange programs, with speakers from the medical schools, for many types of organizations and schools. The committee also devoted radio time to the discussion of vivisection.

Marshall Field & Company of Chicago wished to hold a series of programs during 1932 Baby Week and the Educational Committee was called on to schedule the obstetricians and the pediatricians who talked on all phases of maternal and child health. The Chicago Herald and Examiner sponsored a series of four programs on child health in the Civic Opera House and the committee furnished the speakers and all of the material for four special Sunday magazine sections devoted to child health.

The number of requests for speakers has increased from less than 100 a year in the first few years to 595 in 1935, 498 in 1939 and over 500 in 1940.

Package libraries are supplied to any physician who wishes to help in preparing these popular talks. The committee maintains this service and during the past six years has compiled more than 100 subjects and collected material in all fields of medicine which can be placed in package library form when requested. In 1935 12 special folders were compiled for a medical officer of the American Legion who was planning brief talks on timely health topics for monthly meetings at the various posts. In 1936 400 packages of material on state medicine were sent to individuals on request and in March of that year all remaining material on the subject was put in package libraries and sent to 132 public libraries in the state.

The radio has been another chief avenue for health education of the public. When Miss McArthur took up her work with the organization in 1927 a few scattered programs were being given over Chicago stations. She contacted WGN and secured a regular period every Tuesday. These programs have been given

every week, except during the summer, over WGN since March 1927. Station WJJD has been used continuously since 1929, WAAF since 1930; and a series of programs has been given over WLS, KYW, WENR, WGES in Lithuanian; WBBM has been used the past two years, and two programs a week have been sent over station WHIP since November 1939. The Chicago Pediatric Society cooperated with the Educational Committee in giving daily child health talks over station WJJD during 1931 and 1932. In 1932, 522 talks were given over Chicago stations. The committee has never paid one cent for radio time. The committee is now responsible for about 300 programs a year over Chicago stations. After being broadcast, copies of the talks are sent to county medical societies to be given locally by members of the respective societies. All papers given over the radio are censored by at least two members of the Educational Committee. Subjects on which there is a material difference of opinion in the profession are not discussed. Treatment is left out except in the most general terms. Speakers do not exploit themselves. The programs have been in the form of talks, round table discussions, dialogues, and questions and answers. Subjects have been seasonal whenever possible. The Educational Committee of the Illinois State Medical Society probably has more time given it by radio stations than any other organization in Illinois.

The purpose of the press service has been to supply timely material on existing health conditions and to furnish editors with announcements of medical meetings and events. The work was begun in a small way and has increased to an almost full time effort. In 1924-25, 14 newspapers of the state used the health column sent out by the Educational Committee. In 1939-40, 250 newspapers used the regular daily or weekly health column, in some instances over the authority of the local county medical society.

The Chicago Herald and Examiner in the fall and winter of 1927 cooperated with the committee on a series of 60 articles on "A Brief History of the Chicago Medical Society," "Progress in Medical Education," "Progress of Orthopedic Surgery," "The Endocrines" and many phases of medicine and surgery.

Thousands of releases announcing meetings of county societies have been sent to newspapers in Illinois, Indiana and Iowa. Special announcements of all meetings of the Chicago Medical Society and its branches have been sent to newspapers. Editors have been glad to receive notices of medical meetings and special scientific events. During legislative years editors have requested information on certain bills introduced concerning the practice of medicine in the state and were referred to the Legislative Committee for reply.

During 1928 8,500 articles were released; in 1939 the number was 15,688.

The secretaries of many county societies using this office for publicity of their monthly meetings have found that this newspaper publicity has increased attendance and built confidence in organized medicine.

In July 1936, the manager of Marshall Field & Company Annex Building offered to give the use of one display window on the first floor for presenting displays of value in lay health education. The window has been used almost four years with exhibits changed monthly, on such subjects as Fourth of July Accidents, Accidents in the Home, Foot Disorders, Cancer, History of Surgery and Anesthesia, The Heart, Bronchoscopy, Hay Fever, Hunting Hazards, Immunization, Popular Medical Fallacies, The Story of Circulation.

Exhibits have been arranged for county and branch medical societies in connection with special community demonstrations, annual meetings of the Illinois Federation of Women's Clubs, the Illinois Congress of Parents and Teachers, Marshall Field & Co., Y.M.C.A.'s, annual meetings of the Association of Physical Education Directors, Chicago and American Dental Societies, the American Medical Association.

The Illinois State Department of Public Health has enjoyed friendly relations with the Illinois State Medical Society through the Educational Committee. Its divisions have sought and received cooperation and in turn have assisted the committee. In 1929 the committee with the aid of several obstetricians revised the pre-natal letters used by the Child Hygiene Division, and later cooperated with a group of obstetricians and the Chicago Pedi-

atric Society in preparing the Baby Book used by that division. The committee has been represented on various advisory committees to departments of the State Department of Public Health.

When a pneumonia control program was inaugurated in 1938, the Educational Committee assisted in securing speakers for scientific programs on pneumonia and its treatment and in 1940 distributed the Pneumonia Handbook published by the state department of health.

Close cooperation in the program on obstetrics and pediatrics inaugurated by the state health department has existed since the beginning. Many programs on maternal welfare have been encouraged before women's clubs, study groups, parent teacher associations, home bureau units and American Legion Auxiliaries. Articles on the importance of care of the expectant mother have been released to newspapers, libraries and study clubs. Radio talks have been given on the importance of prenatal and postnatal care. Programs on obstetrics and pediatrics were prepared for county medical societies and given in all sections of Illinois. Through the office of the Educational Committee contacts with officers of county societies were made for the field representative of the maternal welfare program of the state department of health.

During 1938, 81 obstetric papers and 70 pediatric papers were arranged for county medical societies through this office. Thousands of notices were sent to doctors. Hundreds of announcements of the meetings were sent to Illinois newspapers.

At the 1937 annual meeting in Springfield, a Hall of Health was sponsored by the Illinois State Medical Society, and the Educational Committee assisted in securing the exhibitors, in writing the hand book and in giving publicity. A similar Hall of Health was held at the annual meeting in 1939 and another will be held in 1940. The 1939 Hall of Health was a great success. In connection with it essay and poster contests were sponsored in the high schools with suitable awards. Number of exhibitors and popular interest have increased each year.

In an endeavor to spread its services over a wider field, the committee wrote librarians in March 1933, to ascertain whether they wished to have the short articles prepared for newspapers, to post on their bulletin boards and for pamphlet files. The response was gratifying and during the seven years since that time the number of libraries receiving the material every two weeks has grown from 44 to 115 covering all counties of the state. In March 1933, the committee also began to compile a mailing list of interested individuals who might be able to make use of the articles. This list has grown to more than 1,500 with new requests coming every month from health leaders in various fields. Following each annual meeting, the committee has sent out reprints of the President's address. It has also released reprints of articles on the dangers of socialized medicine. Everything which the committee felt would be of interest to the layman has been included in order to give him a better picture of the health program carried on in the United States. During 1939, 41,069 pieces of literature were sent to the mailing list.

During the existence of the committee its work has constantly increased as the public has become conscious of the fact that the Illinois State Medical Society maintains an office to serve them, and as medical societies realize that the committee, which they support, can help them in making contacts and in promoting county medical organization. There is probably no well organized lay group in Illinois that has not used the services of the committee. The funds spent have paid fine dividends by building good will between the profession and the public.

In this survey it is fitting that the Scientific Service Committee be given a prominent place. This committee was authorized by the Council at its meeting in September 1926 to function as a sub-committee of the Educational Committee. The work was to be done by the Educational Committee and all expenses paid from that appropriation. Its function was to make available to county societies, scientific men and material whenever the Society wished it.

The first step was the collection of material on medical, surgical and special subjects believed to be of special interest to the average doctor, or that touched the problems that brought the medical profession into close con-

tact with the public and were most apt to place the profession in an unfavorable light in the public eye.

A speakers' bureau was inaugurated and an attempt made to enlist the cooperation of able men all over the state. The number of speakers has grown from less than 200 to more than 400, representing all sections of the state, medical faculties, men in general practice with wide experience. During the first year 67 speakers were supplied to 44 county societies. In 1939, 74 groups had 334 speakers and in 1940, 90 medical organizations had 363 speakers supplied by the Scientific Service Committee.

Cooperation has been given several county societies in promoting local clinics for crippled children. Pathological conferences, heart and skin clinics were arranged for a number of counties for their regular meetings. In 1933 the Illinois Branch of the Academy of Pediatrics assisted the Scientific Service Committee in sponsoring 11 pediatric all day conferences in different sections of the state. They were outstanding.

This committee was responsible for scheduling hundreds of obstetricians and pediatricians during the last three years for special programs and in promoting interest in holding meetings to discuss pneumonia. Whenever new fields of treatment have been accepted, the Scientific Service Committee has been ready to offer excellent facilities to counties for suitable programs.

In 1931 conferences were held by the committee with prominent obstetricians of the state and with the neurologists and psychiatrists in an effort to arouse interest among the county societies in these two fields of medicine. Two conferences were held with representatives of Chicago newspapers to foster better understanding between the press and the profession.

Each year the committee has published a list of speakers and subjects from which county societies might select programs. In 1939 a new form was adopted classifying the subjects in all fields of medicine with names of men prepared to speak on those topics. This list gives more than 400 names from which a secretary may choose.

Speakers have been furnished weekly to some county societies, monthly to others, and occasionally to the remainder. For four years the committee scheduled monthly programs for a large county medical society of Iowa.

Frequent letters to county society secretaries and presidents have kept them informed of everything new the committee had to offer.

The House of Delegates at its 1939 meeting appointed a special committee to study postgraduate education and to make recommendations at the 1940 meeting. This committee held meetings with representatives of the Council, with the deans of the medical schools of Illinois, Iowa and Missouri, and with representatives of the State Department of Public Health to discuss what had been done in Illinois and to make plans for future activities. As the result of these conferences, this special committee together with the Scientific Service Committee and with the approval of the Council, inaugurated a plan of holding four one-day conferences in key cities of the state. These meetings were held and were attended by men from cities, towns and rural areas. The programs covered many phases of medicine and surgery.

County medical societies have found the Scientific Service Committee helpful in supplying excellent programs, in building attendance and interest and in keeping them informed of new things in medicine and surgery.

Doctors James H. Hutton, Frank L. Brown and Robert S. Berghoff have served as chairmen during the fourteen years of the committee's existence.

The committee is still in its infancy, but is growing and will continue to play a part in the history of the Illinois State Medical Society.

LOOKING BACKWARD FROM OUR HUNDREDTH BIRTHDAY

Charles J. Whalen, M. D., LL. B.
CHICAGO

This issue commemorates the fact that the Illinois State Medical Society is one hundred years of age. The organization was founded June 9, 1840. Founders and original members of the Society long since crossed the great divide. Yet they live with us in our daily practice either in tradition or memory.

Though man is not immortal, in a limited sense a society or organization may be. To the

individual, the years bring wisdom but lessen ability to profit by it. A medical organization is under no such handicap. Tradition and experience are its meat.

On this, its hundredth birthday anniversary, the Illinois State Medical Society, standing on a mountain of cumulative experience, greets its membership with a sprightly sense of being younger than ever. This is no false juvenescence. For youth is growth. And the Society is ever burgeoning.

One Hundred Years! This is an age that most societies find venerable. In the West the next oldest contemporary is the Chicago Medical Society, founded in 1850, three years after the debut of the American Medical Association.

Think back and try to reconstruct the life of that time! Chicago in 1840 was a rude frontier town. Rising out of the mud of Illinois prairies, it was a formless collection of wooden buildings expanding without grace or design. State Street was a narrow plank road. Lake Shore Drive was a row of vice shanties called "the dens in the sand." The town sat squarely in the mud. Of water pipes or sewage system there was none. Chicago's charter as a city was three years old. The population of Chicago in 1840 was 4,470. The death rate for Chicago per 1,000 population was not obtainable. Eight years later, or in 1849, the death rate stood 73.8. In 1850 the death rate was 48.96 and for 1939, 10.0. For the State of Illinois the death rate for 1840 was correspondingly high. For 1939, it has been similarly reduced.

Illustrative of the rapid growth of the central west, the population in Chicago in 1840 was 4,470, and that of the State of Illinois, 476,183. Ten years later, in 1850, the population of Chicago was 29,693; and of the State of Illinois 851,470. Now there are over 3,200,000 people in Chicago and over 7,941,000 in Illinois.

The Illinois State Medical Society was organized three years before the establishment of Rush Medical College (1843)—that was the first educational institution in Illinois, and three years before Dr. Oliver Wendell Holmes had announced the infectiousness of puerperal fever. It was nearly two years prior to Crawford W. Long's discovery of ether and two years (March, 1842) before Long performed the first operation under inhalation of ether; and that was seven years earlier than the first use was made of chloroform for the same purpose. Seven years later the American Medical Association was organized.

Since the founding of the Illinois State Medical Society the great plagues of the past no longer mow down our citizens. Infant and maternity mortality have been greatly lowered. Specific remedies, such as quinine, salvarsan, sulfapyridine, sulfanilamide, insulin, and the curative and prophylatic sera, have been discovered. The advances in surgery have been unparalleled. The psychiatrists take our minds apart, polish up the wheels and return many victims of mental disease to useful citizenship.

Of the three great agencies that limited population when the Society was young—famine, pestilence, and war—two are largely under control. Only war is functioning in the same efficient manner.

Hospital care for the sick has been universally established during the 100 years just past and with a resultant saving of many lives. Few of the younger and middle-aged men in the profession today realize that many of their older colleagues who are even now their competitors, went through the horse-and-buggy, kitchen-table stage of medicine and surgery.

Scientific discoveries and application have doubled the life expectancy in the past fifty years and the population of the world in the last hundred years—a greater increase than ever before attained in the history of the world.

In 1840, at the time our society was established, the old gig and gray Dobbin, saddle bags, sulphur and molasses and the great horn spoon were the doctor's *vade mecum*. Contrast this condition with present day methods of transportation and treatment of the sick! The automobile and the aeroplane relegate old Dobbin to the rear. Newer and more successful medication and surgery supplant cruder methods.

Men and causative forces have achieved closer acquaintance in the century that has elapsed since the inception of the Illinois State Medical Society. Nine centuries of progress were attained through those ten decades. With a similarly continuous pace, perhaps the light of the millenium may be unfolded to the world before the approaching century is ended.

Civilization has been maintaining an excellent balance along lines economic, physiographic,

artistic, philosophic, scientific and humanitarian. Without egotism the medical profession may account itself a vital factor in the motivation of these ten pulsing decades. Doctors of the world have played a conspicuous part in unfolding the wonders of scientific progress that have been revealed, and they have helped to keep them unlocked for daily use.

Owing to self-sacrificing labors of medical men during the last hundred years, epidemic and endemic infections, such as malaria, typhoid fever, smallpox, yellow fever, typhus fever, cholera and hook-worm diseases have been banished wherever civilization extends. Through the achievement of bacteriologists and clinicians the dread diphtheria and syphilis are preventable and curable, and meningitis and many other infections will soon cease being a dread to the community. Medical prevention of communicable disease and reduction of the high mortality that prevailed a hundred years ago is the reason why millions of people are alive today who otherwise would have gone to untimely graves.

Passing the subject of medicine, many events of vital interest to mankind have occurred since this Society was founded. Think back and picture the domestic facilities in use in 1840. For instance, when the Society was founded the sewing machine had not been brought out. Visualize a nation of homes without sewing machines and gain a dim idea of the changes our organization has seen.

The sewing machine is only one of the utilities that was lacking in the industries in 1840. Telephones, automobiles, aeroplanes, electric cars, will be left behind at the very start of a reminiscential journey. Steam vessels had just begun regular trips across the Atlantic. The telegraph was slowly coming into general use —the first line ran between Annapolis and Washington. Cables; electric subways; elevated railways; Pullman sleepers; national railway systems: ready-to-wear clothing; the iniquitous delicatessen; modern plumbing—from kitchen sinks to Oscar Hammerstein's bathtub drain pipe; the submarine; smokeless gun powder; electric light; wireless telegraphy; great telescopes that have made astronomy's readings a fireside companion in thousands of homes and educational institutions; typewriters; cotton gins; motorcycles; passenger elevators; moving pictures; gas ranges and a million other details and conveniences of modern building and construction have been brought forth during the last hundred years.

Farm labor is revolutionized by the invention of machinery to perform heavy work better than human hands or brute strength. *The house of McCormick,* headed by the late Cyrus McCormick, who invented the reaper and threshing machine, must be credited with this liberation.

When our Society was established, anthracite coal was still an experiment as a fuel, while whale oil was still to be reckoned with as an illuminant.

Since 1840 the United States has practically doubled in age and quadrupled in point of area, trade, wealth and population. From a struggling adolescent the nation has become a mature woman and a big sister to the world at large.

In 1840 railroad mileage in the United States was about 5,000 miles for the twenty-six states then in the Union. Today it approximates 300,000 miles and traverses forty-eight states. When the Society was begun, the estimated area of those twenty-six states was 940,000 square miles and the population less than 20,000,000. *In* 1939 *the United States area was* 3,026,789 *square miles and the population was more than* 130,000,000. In 1840 the national wealth of the country was $5,000,000,000. *In* 1939 *it was over* $300,000,000,000. The annual production of wealth in 1840 was $1,000,000,000. *In* 1938 *it was* $100,000,000,000. Foreign trade in 1850 was $250,000,000. *By* 1920 *it was* $9,400,000,000 *and by* 1938 *it had again doubled!* In 1840 the center of population of the United States was 23 miles southwest of Parkersburg, West Virginia; in 1938 it was at Bloomington, Indiana; and in 1940 perhaps it will be shown to be located about Chicago.

A host of happenings regarded now as distant history had not yet occurred when the Society first made its appearance. Martin Van Buren was President of the United States in 1840, and "Tippecanoe and Tyler too" was the slogan of the successful presidential candidates. Thomas Carlin was Governor of Illinois, and the mormons had just arrived in Illinois. Abraham Lincoln was practicing law and vowing that if he ever got the chance to hit slavery, he *would*

hit hard. But the Dred Scott decision, that was to prove the truth of Lincoln's maxim that the "Nation could not exist half slave and half free," was two decades in the future, and it was not likely that even in his wildest dreams the ex-rail splitter fancied himself in the White House.

When the Society began its career, Queen Victoria—but three years on the British throne —married Albert. Louis Philippe was on the throne of France. Germany was a welter of quarreling principalities, of which already Prussia seemed the strongest. Italy was a mere "geographical expression," divided among fourteen different states and provinces, two of the fairest of which were under the ever-cursed dominion of the Hapsburgs. The revolution of 1848 had not yet dawned. The Irish famine lay below the horizon. The Turk ruled Roumania. Japan was yet the "Hermit Kingdom," on whose sacred shores no foreigner was allowed. English ships sailed to India by way of the Cape of Good Hope. Australia was known only as a convict's settlement.

Other red letter years during the existence of the Illinois State Medical Society include the French Revolution. Gold was not discovered in California until (1849) and Australia had this good fortune in 1851. Louis Napoleon was made emperor of France in 1852. The Crimean War began in 1853. Commodore Perry's opening of Japan came in 1854, and the end of the Crimean War, 1855. The great mutiny in India was in 1857, as was the Dred Scott decision, and the rumbling of the Civil War that was to come. The first Atlantic cable message was sent August 4, 1857. Secession of South Carolina came December 20, 1860, and emancipation of Russian serfs, 1861. In the United States the civil war of 1861 first cleft and then re-united the nation. Lincoln's Emancipation Proclamation came with the ending of slavery in 1863; followed by surrender of the confederate army, April 9, 1865, and assassination of President Lincoln on April 14, 1865. The Atlantic cable was laid, 1866, and Dominion of Canada established, 1867. Franco-German War was in 1870; France proclaimed a republic, 1873, three years after the capitulation at Sedan. Chicago burned in 1871; and Mt. Vesuvius erupted, 1872. First elevated train ran in New York in 1878. Bartholdi Statue of Liberty was presented by France to the United States, July 4, 1884. Brazil became a republic in 1889 and the Cinema invented, 1894. Cuban revolution was 1895 and the Spanish-American War, 1898. New York subway was opened in 1904. North Pole was discovered, April 6, 1910; and the Republic of Portugal established that same year. United States postal savings bank system was founded in 1911. South Pole was discovered, December 14, 1911. China proclaimed a republic, 1911; and the Peace Palace at The Hague was dedicated in 1913. Starting of the First World War was in 1914; and the Panama Canal opened, August 15, 1914. China was restored as a monarchy in 1915. Russia rid herself of the czar in 1917. United States entered the First World War in 1917; and the termination of that War occurred November 11, 1918.

Perhaps the greatest industrial and social advances in the five score years just ended have been recognition of the value of women and children to the State, and granting of franchise to women over 21 years of age. Will the changes borne by the next hundred years be as strange? Since history is merely a repetition of emotions and events, there is every reason to believe that progress will surprise itself during the next ten decades. A hundred years from now the world will stand, by comparison, where today stands 1840.

EDMUND ANDREWS, M. D., AND HIS "OXYGEN MIXTURES"

ARNO B. LUCKHARDT, M. D., F.I.C.A.*

Abstracted by

WM. ALLEN PUSEY, M. D.

CHICAGO.

Dr. Arno B. Luckhardt did Chicago medicine a service in the recent article "Edmund Andrews, M. D., and His 'Oxygen Mixtures,'" in "Anesthesia and Analgesia." Andrews was one of Chicago's great men and his work in anesthesia one of the historical contributions in that field. Because he was not spectacular, he is remembered, if at all, as an able surgeon and a scientific plodder. Andrews was truly able but he was the antithesis of a plodder.

*Reproduced by permission from Anesthesia and Analgesia, January-February, 1940.

Brilliant, ingenious, original, fruitful of ideas, he was an impressive speaker, wielded a great influence among the intelligent and was a leader of scientific thought in Chicago.

All this is brought out by Dr. Luckhardt, whose careful scientific temperament is hardly to be stampeded into over-estimation, and whose competence to judge Andrews' work in anesthesia can hardly be challenged.

"As an inveterate hero-worshipper, I have read and re-read innumerable biographies of men and women who have distinguished themselves in one or another field of endeavor, but chiefly in medicine. Among them were a few with avocational gifts or talents quite as singular and meritorious as were their real professional accomplishments," wrote Dr. Luckhardt, giving as examples of versatility, Billroth, Stephen Hales, Charles Bell, Albrecht von Haller and von Helmholtz. Then he made the surprising statement:

"But none of the above mentioned, with the exception of Haller, displayed such a catholicity of interest and such a record of profound accomplishment in diverse fields of endeavor as did Dr. Edmund Andrews."

He went on "to discuss superficially a few things I have ascertained about this remarkable man, and I will have but scratched the surface of his notable career."

Then Dr. Luckhardt outlined some of Andrews' "extra-professional activities . . . before I emphasize . . . his monumental contributions to the theory and practice of anesthesia based on his laboratory and clinical work with nitrous oxide."

On graduating in 1852, after a distinguished career in the medical school of the University of Michigan, Andrews became a demonstrator of anatomy there. He was called to Rush as professor of anatomy in 1855.

In protest against the medical education of that time he joined N. S. Davis, John Evans and others in founding the Chicago Medical College, the first school in the country to require a graded course of three years and to establish a hospital (Mercy) as a necessary part of the school.

Andrews served with distinction in the Civil War with Generals Sherman and Grant. As early as 1867 he was converted to the views of Pasteur and Lister, and proceeded to operate in antiseptic surroundings.

His ability as an artist was shown by his paintings of birds and of scenes around Memphis and Vicksburg while under General Sherman and his design for his own book-plate, which he transferred to the block, ready for the printer.

But his greatest contributions outside of medicine were in the natural sciences. He was an accepted expert in botany, zoology, ornithology and geology. He was the first to propose a scientific explanation of the intermittent eruption of geysers and won a place in geological history with his papers on geysers and glaciers. Luckhardt says of his papers on glaciers, "attesting to their value as contributions of permanent merit in this field is the fact that a well-known geologist whom I recently consulted was familiar with their content, and was chagrined that his own colleagues had not given the author more recognition. He was even more surprised when I told him that the author was by profession a physician and surgeon."

Dr. Luckhardt continued: "Dr. Andrews made most of his geological observations in this special field in the Georgian Bay region of the Great Lakes where for many years he camped during the summer. In these studies he early proposed the conception of land glaciers to account for the glacial striae on outcrops, while other geologists believed them due to floating icebergs dragging on bottom. Whether it was he or Louis Agassiz who first proposed and supported this contention by convincing evidence, time prevented me from ascertaining. Even if further research should attribute to Agassiz' priority in this matter, we can but marvel at the observation and deductive skill of this versatile medical interloper whose judgment and conclusions on this matter were better than those of many contemporary and professional geologists."

Luckhardt called attention to Andrews' study in the social sciences and in philology and compared his philological accomplishments to those of Thomas Young, also a physician, who deciphered the Rosetta Stone and was the author of the undulatory theory of light.

This versatility of the man was only pre-

liminary to Andrews' accomplishments in medicine. He early made himself expert in genito-urinary and orthopedic surgery, because he found these subjects relegated to irregulars. He became an expert general surgeon from his military experience and an authority on military surgery to which he introduced a system of case records. He wrote the first monograph on the mortality of surgical diseases. When, because of his exceptional ability in military affairs, he was promoted to an executive position of "pencil pushing," he promptly resigned from the army.

Andrews' attention was turned to the possibilities of nitrous oxide gas in general surgery by observation of its use (undiluted) in dentistry. Under the title "The Oxygen Mixture" there appeared in 1868 his first publication (embodying the first laboratory and clinical studies) on the subject of nitrous oxide-oxygen anesthesia. The title may appear curious with its emphasis on oxygen rather than on nitrous oxide. But it was perfectly logical. In a few pages Dr. Andrews laid down the general principles for the successful use of all inhalation anesthetics and thoroughly disposed of the theory that nitrous oxide effects anesthesia by asphyxia. Paul Bert's contribution in this field was published ten years later.

"In the introductory paragraph of this classic in anesthesia," wrote Luckhardt, "he indicates the reason for engaging in this research which consists of five preliminary experiments on rats, followed by four confirmatory experiments on human subjects.

"Every physician," Andrews wrote, "observing 'the prompt and pleasant anesthetic action of nitrous oxide gas' as used by dentists, 'has wished that in some way it might be made available in general surgery.' Because the oxygen in nitrous oxide is not available, the patient becomes purple in the face, showing all signs of asphyxia with ensuing 'subsultus tendinum,' and dies in a few minutes. 'I have for some time been experimenting' whether free oxygen added to nitrous oxide might anesthetize for indefinite periods without asphyxia and thus render this gas available 'for prolonged operations of surgery.' Fully aware of the incomplete nature of his experimental work, he nevertheless expressed his conviction that his 'Oxygen Mixture' is certainly 'available for a large part of an operation,' and that 'for pleasantness and safety' it was infinitely better than 'chloroform, ether or unmixed nitrous oxide.'

"Such a mixture of nitrous oxide and oxygen (called by Andrews 'The Oxygen Mixture') had been proposed in England, but was never tried because the proposal was 'overthrown' by none other than Dr. Benjamin W. Richardson, pupil of John Snow, and at that time the greatest living authority on matters of anesthesia. As has happened before in the history of science and medicine, the dogmatic pronouncement of Richardson that such a mixture would be unsafe and not successful sufficed to deter all investigators except Dr. Andrews. There seemed to be a general impression in those days that the addition of oxygen to nitrous oxide was positively contraindicated; for Andrews remarked that instead of the oxygen exerting a harmful effect, he believed that asphyxia would be prevented by its use."

Luckhardt quoted Andrews' protocols of his five experiments on rats and four on humans.

"In evaluating these experiences, admittedly insufficient in number, Dr. Andrews predicts that a 20 per cent. oxygen and 80 per cent. nitrous oxide mixture will prove to be the pleasantest and safest anesthetic known, providing that pure gases (free from air) can be obtained and providing that dilution with air can be avoided during its administration by devising a better 'inhaler tube' for the mouth, with the anesthetist carefully compressing the nares. Dr. Andrews points out that his own tests show that the nitrous oxide generated for these experiments contained 'considerable free oxygen' from atmospheric air, which, with the nitrogen, weakened 'the power of the article.'"

In later papers Andrews reported his other experiences and commented on them in these words:

"These figures indicate that the mortality from chloroform is 'about eight and a half times greater than by ether', that a mixture of them lies between the two, and that "nitrous oxide, contrary to our first impressions, turns out to be the safest of all anesthetics.'"

"A good deal more might have been said about this remarkable man and his work. * * *

At that, I only presented you with a meager bird's-eye view of a great man who has never been honored publicly except by you; for to this day but few of the professional and academic men of Chicago, where he labored so intensively and fruitfully for nearly 50 years, know of their late profound, versatile citizen and scholar even by name. And of course, they know even less of his accomplishments, benefactions and graces."

* * * Luckhardt concluded that, "Perhaps men of this type are too indifferent, too modest and too busy to properly display their wares, and thus naturally do not come to honors which they so richly deserve."

UNITED STATES LEADS WORLD IN CHEMISTRY; GERMANY 3RD

Leadership in chemistry throughout the world is now in possession of the United States, it is disclosed in a report submitted to the American Chemical Society by Prof. E. J. Crane of Ohio State University, editor of Chemical Abstracts.

Germany, which ranked first during the World War period and even a decade ago, has now dropped to third place with Great Britain second. Russia and Japan show striking gains, Prof. Crane reports.

English is predominantly the language of science, the United States and England accounting for 40 per cent of all scientific periodicals published.

The report is based on an analysis of 65,000 abstracts of chtmical discoveries reported last year in Chemical Abstracts, Prof. Crane explained.

Chemical patents account for much of the leadership of the United States. During the last five years U. S. chemical patents have increased 15 per cent in number over the preceding five years. During this same time British chemical patents have declined 12 per cent, French chemical patents have decreased 23 per cent and German chemical patents have dwindled 30 per cent of their former number.—Science News-Letter.

IF THE GOVERNMENT IS INTERESTED

Why does the Government continue to beat a tired horse?

Why does it belabor Medicine with anti-trust prosecution which gets nowhere, when its real object is to find out why the costs of medical care are allegedly so high for low-income groups?

Does medical care consist only of physician's services?

Has the Government never heard of hospitals, manufacturers of medical and surgical supplies, manufacturers of drugs, electrical equipment, optical goods?

How about the salary lists for case workers, accountants, auditors and supervisors, stationery, postage, printing—all the machinery which now grinds out "medical care" for the low or the no income group?

Have these things anything to do with the alleged high cost?

How are they related to physicians' fees, if as, and when collected?

What is the actual (not political) relationship between administrative and other non-professional-service costs, and fees paid for purely professional medical services in care rendered to low income groups?

Is the Government really interested?

If so, it can find out.—Westchester Medical Bulletin.

DEATH IS PERMANENT

A company that employs many trucks in its business admonishes its drivers as follows: "The most dangerous part of the truck is the nut behind the wheel. Say it with brakes and save the flowers.

THE ONE HUNDREDTH ANNIVERSARY MEETING

The 1940 Annual Meeting of the Illinois State Medical Society is the Centennial Meeting, for in June 1840, the first organization of the "State Medical Society of Illinois" was completed. Our medical historians inform us that this organization was maintained until 1847, when the interest apparently waned, and the Society was somewhat dormant until in 1850, when a reorganization was achieved and the Illinois State Medical Society has continued to function since that time.

The Centennial Meeting of 1940 is intended to show a "Century of Progress in Medicine." The program, which is published in this number of the ILLINOIS MEDICAL JOURNAL has been carefully prepared and those responsible for the various portions of the program have kept in mind the interests of the general practitioner.

More Joint Sessions have been arranged for this meeting, and instead of the usual stag entertainment on Tuesday evening, a joint meeting has been substituted with several speakers carefully selected to discuss some problems in medicine of general interest to all physicians.

The Hall of Health in the large Peoria National Guard Armory should be of much interest to the public in and around Peoria, and many outstanding health exhibits have been arranged to show what has been done for the protection of the health of the citizens of our State. Many cooperating organizations have assisted in developing these fine exhibits, covering all phases of health and health work.

It is hoped that every member of the Illinois State Medical Society will read the various announcements and the program for the Centennial Meeting, and that the largest attendance in the history of the Society will be present on this gala occasion.

Program

of the

One-Hundredth Annual Meeting

ILLINOIS STATE MEDICAL SOCIETY

Peoria, Illinois, May 21, 22, and 23, 1940

1940 Official Program

GENERAL SESSIONS

OPENING MEETING

TUESDAY AFTERNOON, MAY 21, 1940

1:00—Meeting officially opened by President, James H. Hutton, Chicago.

Invocation by Dr. J. B. Rosemurgy.

Address of Welcome by Mayor of Peoria.

Address of Welcome by President of Peoria County Medical Society, O. E. Barbour, Peoria.

Report of Chairman, Committee on Arrangements, Arthur Sprenger, Peoria.

WEDNESDAY MORNING, MAY 22, 1940

10:00—Oration in Medicine—"The Role of the Kidney in Cardiorenal-Vascular Disease." Leonard G. Rowntree, Philadelphia, Penn.

10:40—Oration in Surgery—"Thyroid Disease: Its Diagnosis and Management." Frank Lahey, Boston, Mass.

WEDNESDAY AFTERNOON, MAY 22, 1940

1:30—President's Address—James H. Hutton, Chicago, President Illinois State Medical Society.

THURSDAY MORNING, MAY 23, 1940

Induction of the President-elect.

Immediately before the closing of the meeting of the House of Delegates, the President-elect, J. S. Templeton, Pinckneyville, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, James H. Hutton of Chicago.

All members and guests at the meeting may be present at this interesting function.

JOINT SESSIONS

TUESDAY EVENING, MAY 21, 1940

Shrine Temple

MEETING OF ALL SECTIONS

8:00—"The Operative Treatment of Carcinoma of the Esophagus." Dallas B. Phemister, Professor and Chairman of the Department of Surgery, University of Chicago, Chicago.

8:30—"Recent Advances in Gynecologic Endocrinology." J. P. Greenhill, Professor of Obstetrics and Gynecology, Loyola University School of Medicine. Professor of Gynecology, Cook County Graduate School of Medicine, Chicago.

9:00—"The Nature of Obesity." L. H. Newburgh, Professor of Clinical Investigation, Department of Medicine, University of Michigan Medical School, Ann Arbor, Michigan.

9:30—"Choice and Dosage of Chemotherapeutic Agents for Bacterial Infections." Henry L. Barnett, Research Fellow in Pediatrics, Washington University School of Medicine, St. Louis, Missouri.

WEDNESDAY MORNING, MAY 22, 1940

9:00—"Selection of Cases for Splenectomy." Russell L. Haden, Chief of the Medical Service, Cleveland Clinic, Cleveland, Ohio.

9:30—"Diagnosis and Treatment of Common Deficiency Diseases in the Adult." Thomas D. Spies, Associate Professor of Medicine, University of Cincinnati, College of Medicine, Cincinnati, Ohio.

NOTE DAYLIGHT SAVING IN PEORIA

10:00—Oration in Medicine—"The Role of the Kidney in Cardiorenal-Vascular Disease." Leonard G. Rowntree, Philadelphia, Penn.

10:40—Oration in Surgery—"Thyroid Disease: Its Diagnosis and Management." Frank Lahey, Boston, Mass.

THURSDAY MORNING, MAY 23, 1940

9:00—"Cholecystography: With Special Reference to the Diagnostic Value of the Emptying Time." Adolph Hartung, Professor of Roentgenology, University of Illinois College of Medicine, Chicago.

9:30—"Pneumonia: Its Diagnosis and Treatment." W. B. Sutliff, Assistant Director Pneumonia Control Division, Department of Health, New York City, N. Y.

10:00—"Indications and Results of Subtotal Resection of the Pancreas for Hypoglycemia." Vernon C. David, Chairman of the Surgical Department, Rush Medical College and Presbyterian Hospital, Chicago.

10:30—"Visual Field Changes." C. W. Rucker, Assistant Professor of Ophthalmology, University of Minnesota Graduate School of Medicine, Associate in Ophthalmology Mayo Clinic, Rochester, Minn.

SECTION PROGRAMS

SECTION ON MEDICINE

Edgar M. Stevenson.....Chairman
Willard O. Thompson.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

"Collapse Therapy in Pulmonary Tuberculosis." Jerome R. Head, Chicago.

Five to eight year end results are reported on five hundred cases of pulmonary tuberculosis treated at Edward Sanatorium between 1932 and 1936. During this period the various measures of collapse therapy have been used whenever they were deemed indicated. The statistics have been tabulated to show the results of the various collapse measures and the results of the whole program in the treatment of tuberculosis. These figures are compared with those collected from the same institution during years when collapse therapy was used sparingly or not at all. From this comparison it has been possible to make an estimation of the value of the different procedures.

"Diagnosis and Management of Early Tuberculosis." Robinson Bosworth, East St. Louis.

The paper discusses the seriousness of tuberculosis, the difficulties, and the methods required to make a diagnosis of early pulmonary tuberculosis; the treatment indicated for early cases if progress of the disease is to be prevented and arrest of the pathology effected before the patient has spread the infection to others.

"Pregnancy and Tuberculosis." Fred M. F. Meixner, Peoria.

Divergency of opinion among writers as to proper procedure when pregnancy and tuberculosis both are present. Indications for therapeutic abortion in different types of cases. Proper time to intervene. Conduct of patients where pregnancy is not interrupted. After treatment important. Reference to Roentgen-ray technique for therapeutic abortion.

"The Insulins in the Management of Diabetes." Thomas D. Masters, Springfield.

This paper will describe the indications and use of the various insulins separately and combined in the management of diabetes mellitus.

"Applications of Vitamin B_1 to Neuropsychiatry." F. G. Norbury, Jacksonville.

This paper deals with therapeutic possibilities that are available in neuropsychiatry with vitamin B_1. Before synthetic vitamin B_1 was available the value of vitamin B was known. The synthetic preparation has lent itself to greater knowledge of metabolism of nerve tissue and to therapeutic application. Experimental and clinical results are cited.

"Endocrine Studies of Patients After Subtotal Hypophysectomy." Paul Starr and Loyal Davis, Chicago.

Twenty-five patients who had been operated upon for pituitary tumor from one to ten years previously were studied. Laboratory tests of thyroid, parathyroid, diabetic, adrenal and gonad function were performed and the results compared. Indications for specific therapy appear and interpretations of pituitary physiology are suggested.

"The Treatment of Acute Glomerulonephritis." Harold C. Lueth, Robert W. Keeton, and Mr. Harold Hailman, Chicago.

Based on the past four years experience at Research and Educational Hospitals and a careful review of the records of the medical service for the past 15 years, the treatment of acute glomerulonephritis is discussed in detail. This includes a brief consideration of the incidence, etiologic factors, diagnosis and prognosis of the disease. A complete program for the management of patients with acute glomerulonephritis in its various stages based on physiologic considerations is given. Similarly the complications as acute pseudouremia and cardiac failure are discussed fully.

"Laboratory Aids in the Diagnosis of Coma." L. Gerber, Peoria.

Since there are many causes of coma that require emergency treatment to save life, the importance of immediate diagnosis is evident. Advances and improvements in laboratory methods make it possible for laboratories, even in small hospitals, to aid in these emergencies, and particularly in those cases where a clinical history cannot be obtained. Frequently the laboratory can point directly to a diagnosis, notably in coma arising from some exogenous or endogenous poison. Even when the cause of coma is known, the laboratory often offers a means of determining the degree of intoxication and the effect of treatment. The various causes of coma that lend themselves to laboratory procedures include alcoholism, trauma. diabetic coma and insulin shock, uremia, poisoning by barbiturates, carbon monoxide, and bromides, meningitis, pneumonia, and leukemia. Applications of tests to the fluids of the body such as blood, urine, spinal fluid, and gastric contents are described. Slides present the most helpful laboratory data.

Discussion only on receipt of properly executed blanks.

TUESDAY EVENING, MAY 21, 1940

MEETING OF ALL SECTIONS

(For complete program and abstracts of papers, see Joint Sessions.)

WEDNESDAY MORNING, MAY 22, 1940

MEETING OF ALL SECTIONS

(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

Chairman's Address—E. M. Stevenson, Bloomington.

"The Specific Treatment of Anemia." Russell L. Haden, Cleveland, Ohio.

The possible primary factors in the production of an anemia are: (1) mechanical blood loss, (2) excessive hemolysis of red cells, (3) depression of bone marrow activity so that fewer cells are formed. and (4) a deficient supply of the specific red cell building materials, iron and the erythrocyte maturing factor of liver.

The treatment of anemia depends on the recognition of its essential factors operative in producing the anemia. The therapeutic procedures considered are: (1) transfusion, (2) removal or treatment of the cause, (3) diet, (4) iron, (5) liver and liver substitutes and (6) splenectomy. These procedures are considered in detail.

"The Maintenance Treatment of Pernicious Anemia with Parenteral Liver Extract." Howard L. Alt, Chicago, and Richard H. Young, Evanston.

During the last eight years, fifty patients with pernicious anemia have been maintained for varying intervals with parenteral liver therapy. Two of these patients have received parenteral liver therapy exclusively during the entire period. Careful blood counts and neurologic examinations have been made at frequent intervals. In analyzing this series of cases, the following points will be emphasized:

1) The criteria of complete remission in pernicious anemia.
2) The maintenance dose of various concentrated liver extracts.
3) The course of neurologic changes with adequate and with inadequate treatment.
4) The relation of the erythrocyte picture to progression of cord degeneration.
5) Allergy to parenteral liver extract.

"Contribution of the Laboratory to the Treatment of Hemorrhage." Armand J. Quick, Milwaukee, Wisconsin.

It has been established that prothrombin, thromboplastin, calcium, and fibrinogen, are essential for the coagulation mechanism. Lack of calcium and fibrinogen are very rarely the cause of bleeding. Knowledge concerning thromboplastin is still unsatisfactory. Though blood contains a great excess of prothrombin, nevertheless it has been found by the newer laboratory methods that this constituent is low in many newborn infants, in cases of obstructive jaundice. and often in patients with serious liver damage. With the discovery of vitamin K, it has been possible to establish that the first class is caused by a simple lack of vitamin K: the second by poor absorption; and the third by impaired utilization for the synthesis of prothrombin.

"Vitamin K." Raymond W. McNealy, Chicago.

The importance of the hemorrhagic tendency in patients with obstructive jaundice has been emphasized my many writers.

In obstructive jaundice there are two important disturbances in the physiology of the biliary tract. The first is retention in the biliary tract of substances which normally should pass into the intestines and the second is a disturbance in the absorption of important substances from the intestine which should then pass by way of the portal circulation to the liver. Interruption of these mechanisms may be accountable for the train of disturbed physiological processes which lead to prolonged bleeding time and hemorrhage. Among other things the prothrombic content of the blood is reduced. Since this content must be maintained at a certain level to insure against prolonged bleeding or hemorrhage some attempt must be made to increase its production or synthesis by the liver.

The essentials in the management of these cases are enumerated.

"The Clinical Application of Vitamin K." Hugh R. Butt, Rochester, Minnesota.

The clinical usefulness of vitamin K in the prevention and control of bleeding associated with obstructive jaundice is now well established. It has been observed recently that a deficiency of prothrombin can occur in hepatic injury without jaundice, in various gastro-intestinal disorders, in instances in which there has been an inadequate intake of food and in newborn infants. Hemorrhage in these conditions usually is not recognized as being associated with a deficiency of prothrombin. Our experience with the use of concentrates of alfalfa and the newer synthetic compounds with vitamin K activity in the control of the hemorrhagic tendency which may exist in the forementioned disorders will be discussed.

"The Prognosis in Juvenile Rheumatic Fever." Stanley Gibson, Chicago.

Many factors influence the prognosis of rheumatic fever arising in childhood. Age at outset, mode of onset whether with chorea, polyarthritis, or carditis, presence of multivalvular involvement, pericarditis, and rheumatic nodules are considered in relation to prognosis. The study is based on 1487 cases of rheumatic fever. Many of these patients have died. Some have been lost to view. The present status of the remainder, followed for varying lengths of time, is discussed.

Discussion only on receipt of properly executed blanks.

THURSDAY MORNING, MAY 23, 1940

MEETING OF ALL SECTIONS

(For complete program and abstracts of papers, see Joint Sessions)

SECTION ON SURGERY

Frederick H. Christopher.....Chairman
Charles L. Patton.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

JOINT SESSION WITH CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY

2:00—"Wound Healing." Michael Mason, Chicago. Discussion opened by Hilger P. Jenkins, Chicago.

"Treatment of Infected Wounds." David J. Lewis, Springfield.

A wound which has been neglected or left open for six hours or more should usually be considered as infected and will probably heal by second intention.

Any one caring for a wound should remember Pare's statement, "I dressed him. Nature healed him."

The subject matter will be discussed under two headings:

1. Care of the wound itself—primary care, dressings, use of antiseptics, position, splinting, preservation of function of the part involved, use of drains, use of tissue digestants and wound stimulants, skin grafting, passive motion, physiotherapy.

2. Care of the patient—effect of patient's condition on healing of the wound, hydration, age, constitutional diseases, anemia, etc. Effect of the wound on the general condition of the patient."

"Postoperative Thrombosis and Embolism." Geza de Takats, Chicago.

"Treatment of Compound Fractures." Wm. R. Cubbinss, James J. Callahan, and Carlo S. Scuderi, Chicago.

Compound fractures in our clinics have been handled in the simplest possible manner. Cleansing and removal of hair and dirt around the edges of the wound; careful scrubbing and cleansing of the wound itself, with normal salt solution; complete and accurate debridement, with removal of all dead tissue and detached fragments. If bone is soiled, scrub with a brush or chisel out the soiled area. Loose closure, stitched one inch apart, so that the extravasated fluid may continue the cleansing process. No drain. Frequent changing the first 72 hours of dressings. No washing of wound. Immobilization and, in leg compounds, with skeletal traction in os calcis.

"Treatment of Burns." Chester R. Zeiss, Chicago.

The prerequisite of any burn therapy should be to relieve pain, prevent excessive loss of body fluids, reduce absorption of toxins, hasten separation of dead tissues, prevent or minimize scar tissue formation, minimize surface infections, and promote and enhance healing.

A modification of the Ambrine technique has been used with success. The materials needed are inexpensive and consist of a paraffin with a low melting point, a double boiler, a water jacket atomizer, a fan, a camels hair brush, thin sterile cotton, and absorbent or cellucotton.

The advantages of the paraffin wax treatment are, (1) relief of pain immediately or within 24 hours, (2) the period of toxemia is lessened, (3) infection is minimized, (4) healing is rapid, (5) cicatricial formation is at a minimum. (6) the attending surgeon is always aware of changes occurring at the burned site.

TUESDAY EVENING, MAY 21, 1940

Meeting of All Sections

(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY MORNING, MAY 22, 1940

Meeting of All Sections

(For complete program and abstracts of papers, see Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

"Care of the Feet in Normal Children." Harold Sofield, Oak Park.

Many divergent opinions are prevalent as to proper care of the feet of babies and children. Popular magazines often carry very contradictory suggestions and various textbooks promote contradictory ideas. From a study of pathological conditions of children's feet in three of the largest orthopedic clinics in Chicago during the past twelve years, and from the examination and care of many normal feet of children, some definite suggestions as to proper care of the feet during the growing periods are made and a discussion of proper footwear is advanced.

Discussion opened by Walter Fischer, Chicago.

"Cholecystectomy; Technique and Postoperative Treatment." Illustrated with Motion Pictures. Ralph B. Bettman, Chicago.

The technique of the author as developed during many years as surgeon of the Michael Reese Gall Bladder Group is illustrated by means of motion pictures and the rational of the various steps is described. The reason for choice of incisions, the non-use or use of drains, as well as the methods of visualizing the common duct are discussed. There are definite and reliable indications for intrinsic exploration of the common duct. The author is not in sympathy with the present vogue of Choledochostomy in almost every case. The after treatment is extremely important but should be simple rather than complicated.

"Cholecystitis and Cholelithiasis in Children." R. A. Tearnan, Decatur.

Cholecystitis and cholelithiasis in children has always been considered a rare disease.

This opinion, however, will have to be revised judging from the number of cases reported recently in the literature. Due to the fact that almost all of the cases reported were first diagnosed as appendicitis, it seems that the incidence of cholecystitis and cholelithiasis in children should be given due consideration when confronted with an acute abdomen.

We wish to report a case of cholelithiasis in a boy nine years old, diagnosed by x-ray and confirmed at time of operation.

Discussion opened by John A. Wolfer, Chicago.

"Transurethral Approach to the Diagnosis and Treatment of Infections of the Seminal Vesicles." Robert H. Herbst and James W. Merricks, Chicago.

Historical review of the surgery of seminal vesiculitis. Infection in these organs frequently persists after subsidence of prostatitis due to obstruction in the ejaculatory ducts. Technique of catheterization and dilatation of the ejaculatory ducts. Roentgenological visualization of the seminal vesicles as an aid in diagnosis. Successful treatment of these infections depends upon the institution of the fundamental principal of surgical drainage. Case reports. Lantern slides.

Discussion opened by Charles Weller, Aurora.

"Prostigmin in Peripheral Vascular Disease." Samuel Perlow, Chicago.

Prostigmin is a parasympathetic stimulator. Pharmacologically it has been shown to cause vasodilation. Clinically it has been helpful in the treatment of peripheral circulatory disturbances.

Discussion opened by Frank V. Theis, Chicago.

THURSDAY MORNING, MAY 23, 1940

Meeting of All Sections

(For complete program and abstracts of papers, see Joint Sessions)

SECTION ON EYE, EAR, NOSE AND THROAT

Frank W. Brodrick.....Chairman
Thomas D. Allen.....Secretary

TUESDAY MORNING, MAY 21, 1940

9:00—"The Operative Treatment of Deafness." George E. Shambaugh, Jr., Chicago.

Ever since otosclerosis was discovered as the most important cause for progressive conduction deafness in adult life, attempts have been made to remove the obstruction to sound

conduction so that these people might again hear air-borne sounds. Barany, Jenkins, Holmgren, Sourdille and Lempert have worked on this problem and have all made important contributions toward its solution. Experience with the Lempert operation over a two-year period has shown that new bone formation in and around the newly created fistula is the most frequent cause for subsequent loss of the initial hearing improvement. With improved technique in making the fistula, and using a new method for removing bone dust particles the fistula has remained open and the hearing improvement has been maintained in a high percentage of cases. Case reports and presentation of cases.

Discussion opened by Robert Henner, Chicago.

9:30—"Early Glaucoma." Virgil Wescott, Chicago.

Glaucoma has fatigued the attention of medical men since the beginning of time. With the exception of some operative procedures, no real lasting contributions have been made as to its etiology or treatment. Its symptoms and pathology are well known. Its cause will never be known unlesss opththalmologists turn internists.

Discussion opened by W. A. McNichols, Dixon.

10:00—"Some Psychological Effects of Deafness in Children." George L. Drennan, Jacksonville.

Ten years of experience with deaf children has led me to summarize some of my observations.

Shambaugh said, "No one knows the extent of the world of silence." I would change this to say, "No one knows the loneliness of the world of silence."

That bearing and speech are important in the normal development of a child may be seen when we compare the deaf with the hearing child between the ages of two and seven years. The deaf child is at a stand-still, while the hearing child develops rapidly.

When the deaf child finds he can no longer communicate with or understand his companions, is it any wonder that he feels isolated. depressed or persecuted?

Discussion opened by Robert H. Gault, Ph.D., Northwestern University, by invitation and by Bert I. Beverly, Chicago.

10:30—"Ocular Hemorrhages in Kodachrome." Roy O. Riser, Park Ridge.

This will be a lantern slide demonstration of hemorrhages in full color. A few hemorrhages of lids, bulbar conjunctiva, and anterior chamber will he followed by a numher of preretinal, retinal and subretinal hemorrhagic conditions. These will he subdivided into those of trauma, thromhosis, hypertension, diabetes and alhuminosis and blood discrasias.

Discussion opened by Beulah Cushman, Chicago.

11:00—"Diagnosis and Treatment of Sinusitis by Proetz' Method." Hanby L. Ford, Champaign.

History, technique, Proetz method, hased upon physical behavior of fiuids, necessitating an exactitude in positioning of patient, careful reduplication of technical factors in roentgenography in the upright position—offers a method of unquestioned value in partial radiopaque filling. ,

Therapeutically, with ephedrine in saline, it has been generally accepted.

Discussion opened by George Woodruff, Joliet.

11:30—"The Relation of Meckle's Ganglion to Accommodation and Intraocular Tension." W. H. Luedde, St. Louis, Missouri. Guest speaker.

Clinical experiences are presented which indicate that topical applications to the mucosa near the spheno palatine (Meckle's) ganglion or injections of novacaine into that area by way of the posterior palatine canal as used for nerve blocking for dental surgery, may affect intraocular pressure. Also, a similar result in severe spasm of accommodation is reported. Microanatòmical relations of the ganglion are considered in suggesting an explanation for tbese results.

BUSINESS MEETING

TUESDAY AFTERNOON, MAY 21, 1940

INSTRUCTION COURSES

OPHTHALMOLOGY.

2:00-3:30—"Neuro-opththalmology." Max M. Jacobson, Chicago.

Neuro-perimetry, a subdivision of Neuro-ophthalmology, will he presented in essential detail; a complete necessary reference list will be given; its importance as a "connecting link" hetween Neurology, Ophthalmology, Neuro-surgery and Internal Medicine will be shown. A careful analysis of the anatomy of the central visual pathways, its anatomical relations and localization of the constituent nerve fihers will be discussed, aided by the projection of pictures and diagrams. The clinical application of the knowledge of the anatomy of the central visual pathways will be presented. Certain localizing phenomena of cerebral import will be considered.

The anatomy of, lesions of, and examination of tbe pupillomotor pathways will be discussed.

There will he no demonstration of anatomical specimens nor clinical patients.

3:30-5:00—Dry Clinic. Sanford Gifford, Chicago.

OTOLARYNGOLOGY.

2:00-3:30—"Irrigation of the Frontal and Maxillary Sinuses." O. E. Van Alyear, Chicago.

Irrigation in the treatment of disease of the frontal sinus is a procedure not in common use in rhinology. Most rhinologists would advocate this form of treatment as an adjunct to the other therapeutic methods if they were convinced that a safe dependable technique could be developed, applicable to most cases. Failure to develop readily such a technique is due to the extreme anatomic variations which characterize the frontal sinus and its intranasal connections. Familiarity with these variations, however, simplifies the approach to the sinus and one equipped with this knowledge should, with sufficient application, develop a tecbnique whicb will prove satisfactory.

Irrigation of the maxillary sinus is the office routine of most rhinologists. Three methods of approach are available and rhinologists may be grouped according to the method they use.

A portion of the time will be allotted to the practical application of cannulization technique, and for this purpose there will be available a supply of specimens and cannulas of the types recommended for use in the irrigation of these sinuses.

3:30-5:00—Dry Clinic. Hans Brunner, Chicago.

TUESDAY EVENING, MAY 21, 1940

Creve Coeur Club

6:00—Annual Banquet of the Section. "Five Years at the Peking Union Medical College." Peter C. Kronfield, Chicago.

8:00—Meeting of all Sections.

(For Complete Program and Abstracts of Papers, See Joint Sessions)

WEDNESDAY MORNING, MAY 22, 1940

Meeting of All Sections

(For Complete Program and Abstracts of Papers, See Joint Sessions)

WEDNESDAY AFTERNOON, MAY 22, 1940

2:00—Business Meeting—Election of Officers.

2:15—Chairman's Address. F. W. Brodrick, Sterling.

2:30—"History of the Artificial Larynx." William L. Hanson, East St. Louis.

Czermak, 1859, was the first inventor of an artificial larynx. Improvements were made by Foulis, 1877; Stoerk, 1887; Tapia, 1914; Lederer in 1922; McKenty, 1924; Sheard, 1931—a metallic tube with a vertical reed; Burchett and Riesz made four instruments for Bell Telephone Laboratories from 1931 to 1934. In 1939, my patient, Mr. Ottie Roberts, and I, made a new instrument of hard rubber case and reed which in our opinion is easier to operate.

Discussion opened by F. L. Lederer, Chicago.

3:00—"Evaluation of Accommodation and Convergence in Refraction." Philip A. Halper, Chicago.

A refraction is incomplete without the knowledge of the accommodative range, muscle balance and muscle strength for it is in the framework or environment of their binocularism that the ametropic eyes should work.

The muscle examinations must of necessity be complete but not too time consuming. The muscle balance can be determined either by prism displacement or with the Maddox rod. Fusion and depth perception should be ascertained with a stereoscope in certain cases.

Orthopsis, the use of prisms in the glasses and surgery are to be used when indicated.

Discussion opened by Earle B. Fowler, Chicago.

3:30—"When Hearing Aids Should Be Used." Austin A. Hayden, Chicago.

A hearing aid should he used (1) when hearing loss is sufficient to handicap the individual (a) socially or (b) economically; (2) when the hearing can be substantially improved by an instrument; (3) when the patient is willing to wear one.

Choice of bone or air conduction and carbon or tube amplification must he carefully considered. Each has definite advantages.

Correlation by Otologists of the efforts of Leagues for the Hard of Hearing, manufacturers of hearing aids and other agencies is necessary if the deafened are to be adequately served.

Discussion opened by Elmer W. Hagens, Chicago.

4:00—"Splenic Extract in Glaucoma." Michael Goldenburg, Chicago.

A clinical report is presented on the use of this medicament in the various types of glaucoma over a two year period. Some graphs are shown, noting type, time, and reaction. The opinion is expressed that it has therapeutic value in certain types and under certain conditions, but these values are not always predictable. No untoward reactions have been observed during this time.

Discussion opened by F. Fenger, Clinical Research Dept., Armour & Company, Chicago. (By invitation.)

4:30—"Otolaryngology and the Weather." Noah D. Fabricant, Chicago.

The fact that the weather and the season can now he measured, constitutes a distinct advantage in evaluating contemporary otolaryngological problems. Definite alterations such as those involved in daily temperature and barometric pressure changes can be utilized to establish the relationship between the weather and acute tonsillitis, acute otitis media, the common cold, sinusitis, mastoiditis, laryngitis, tracheitis, migraine and acute infections of the upper respiratory tract. The vasomotor and biochemical changes that are induced in such individuals are described, and a series of illustrative case reports presented to demonstrate the significance of the weather in precipitating a variety of otolaryngological diseases.

Discussion opened by Max Berg, Chicago.

THURSDAY MORNING, MAY 23, 1940

SULPHUR SYMPOSIUM

9:00—"The Chemistry of the Sulfonamides." Frank T. Maher, University of Illinois, Chicago. (By invitation.)

A brief historical review of the development of the sulfonamides and preceding compounds is presented. This leads into a discussion of the structures of the more important compounds of the group, some of their chemical properties and physical attributes.

Methods of recovery and determination, together with studies in distribution, metabolism and fats in the animal body are discussed.

A brief outline of theories of mode of action, together with a preliminary survey of toxic phenomena and therapeutic application is included. Formulas of the more outstanding compounds are presented, together with their more common trade names, and the dates of their presentation to the literature.

The probable configuration of the chemical compounds in this group will be taken up to show their relation to each other and the probahle reasons for their activity.

"Sulfanilamide and Related Compounds." E. M. K. Geiling, University of Chicago, Chicago. (By invitation.)

The introduction of sulfanilamide and related compounds marks a new epoch in chemotherapy. Many new compounds will be introduced in the near future. Hence great care must be exercised in testing out the newer products. Sulfanilamide, sulfapyridine, and sulfathiasol will be discussed from the toxicological angles and the indications for their use will he pointed out.

"Practical Application of Sulphuramids to Otolaryngology." Glenn Greenwood, Chicago.

Treatment of clinical bacterial infections with sulphur compounds has been particularly successful in pathology of the upper respiratory tract. Especially is this true of otitic infections caused by the beta hemolytic streptococcus and the pneumococcus.

A comparative resume of cases involving the upper respiratory tract, primarily in children, will be presented, emphasizing somewhat the masking of symptoms and signs produced by this mode of therapy.

"Sulfanilamide in Ophthalmology." Harry W. Woodruff, Joliet.

Report of infected eye injuries.
Report of cases of Gonorrheal Ophthalmia.
Various cases reported in literature.
Ophthalmia Neonatorum. Corneal Ulcers. Trachoma.
Sympathetic Ophthalmia.
Failures in eye diseases.
Importance of hospitalization of cases in which large doses are used.
Importance of the use of Sulfanilamide as a prophylaxis in operative cases.

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane.....Chairman
N. O. Gunderson.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

SYMPOSIUM ON SYPHILIS

"The Kahn Verification Test for Syphilis." H. J. Shaughnessy, Ph. D., Springfield.

Discussion opened by E. Piszczek, Chicago.

"The Continuous Alternating Scheme of Treatment in the Control of Acquired Syphilis." R. A. Vonderlehr, Washington, D. C.

The control of syphilis demands different methods and techniques than we have applied to the control of other communicable diseases. The outstanding method for control of early syphilis—hence of all syphilis—is continuous and adequate treatment. The Continuous Alternating Scheme sponsored by the Cooperative Clinical Group and the U. S. Public Health Service is a tested regime that surpasses in efficiency and other schedule readily available to the general practitioner. A comparison is made between this system, the American intermittent scheme, and the intensive scheme advocated by Shultz-Fullitzer. Comparisons are based upon ability to obtain rapid reversal of positive blood, prevent mucocutaneous relapse, forestall late nerve, heart, and bone manifestations of syphilis, and bring about probable "cure." In 15 months the individual patient continuously treated will be protected against relapse or progression of the disease in 99 cases out of 100. At the same time treatment sets up a chemical quarantine which prevents spread of the infection. Herein, lies the control of syphilis.

Discussion opened by G. O. Taylor, Chicago.

"Diagnosis and Treatment of Syphilis in the Infant and Teen Age." F. E. Senear, Chicago.

A discussion of the symptoms and signs of syphilis as seen in the infant shortly after birth, in the recurrent period, and in the tardy congenital type. Consideration of the essential and non-essential stigmata resulting from the disease, and their place in diagnosis. Serologic finding in congenital syphilis, with particular reference to the effect of syphilotoxemia upon the serologic reaction. A review of the drugs employed in the treatment of syphilis, and a study of the literature with regard to the comparative value of various systems of treatment.

Discussion opened by H. J. Burstein, Decatur.

"Criteria for Discontinuing Treatment for Syphilis." S. W. Becker, Chicago.

The various considerations which justify discontinuance of certain phases of syphilotherapy or of all treatment for syphilis are discussed. The various treatment measures comprise both specific and non-specific procedures. The criteria vary with the variety of syphilis, namely: prenatal, early acquired, late acquired: with physiologic and pathologic states, namely: age, parturition and the presence of concomitant disease; and the results of clinical and serologic examination. In a large majority of cases decision relative to discontinuance of therapy should be made on the basis of definite schedules for treatment or only after consultation with a syphilologist.

Discussion opened by H. M. Soloway, Springfield.

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY AFTERNOON, MAY 22, 1940

2:30—"Prevention of Contact Infection in Children." Normal T. Welford, LaGrange.

Contact with infected adults in a household is often the source of tuberculosis as well as of other diseases in children. Primary tuberculosis in early childhood is of potential danger later in the child's life. A school teacher with active tuberculosis will infect many of her pupils. Domestic servants should not take care of children unless they are known to he free from communicable tuberculosis, syphilis or other infectious diseases.

The American Academy of Pediatrics advocates that all adults intimately associated with children should have periodic health examinations. Other health organizations are cooperating in this campaign for "Healthy Workers in the Home."

Discussion opened by E. T. McEnery, Chicago.

"The Organization and Functions of the District Units of the State Department of Public Health." A. C. Baxter, Springfield.

Reasonably good public health service, provided at governmental expense, is now not only expected hut demanded by the people. This popular interest is reflected in the public attitude toward epidemic outhreaks of preventable diseases and in the attitude of legislative bodies toward appropriations to health departments and toward laws concerning health matters. This situation has led to greatly increased demands on the State Department of Public Health for services and a greater and greater tendency of the public to hold health authorities responsible for unsatisfactory health conditions. The establishment of district units, the local representation of the State Department of Public Health, was a natural and logical administrative outgrowth of this situation. The organization and functions of these units are described.

Discussion opened by Walter C. Earle, Champaign.

"The Control of Tuberculosis." H. V. Hullerman, Springfield.

1. Reported incidence and mortality of Tuberculosis in Illinois.
2. Facilities for treatment.
3. Relation of facilities to distrihution of cases.
4. Present control measures:
   a. Glackin Act.
   b. Recent legislation on Sanatorium Law.
   c. The Illinois Tuberculosis Association.
   d. Illinois Department of Puhlic Health.
   e. Sanatoria.
5. Measures to be stressed in future control:
   a. Sanatoria.
   b. Intensified and cooperative field work.
   c. Education.
   d. Rehabilitation.
   e. Further legislation.

Discussion opened by W. P. Shahan, Springfield.

"Industrial Hygiene in a Public Health Program." M. H. Kronenberg, Chicago.

Industrial hygiene is a public and not merely a class interest. Any public health program to be successful must be rather closely integrated with other public health activities. Whether the program be child hygiene, tuberculosis, venereal

disease, pneumonia control or industrial hygiene, all are striving toward the same ultimate result—better community health. The scope of industrial hygiene is not merely the control and prevention of occupational disease. It is a complete adult health program embracing the whole worker, and is closely interwoven with community health. This service should in no way interfere with the domain of the private physician. The province of industrial hygiene is limited to preventive and not curative medicine. There still remains, however, problems of enormous magnitude among our industrial population which stands as a challenge to public health workers to apply the knowledge and skill now available and to further extend the frontiers of science in the service of health conservation. The various principles of public health and preventive medicine find a very suitable and practical application among the millions of workers in industry under the appropriate title of industrial hygiene.

Discussion opened by A. E. Russell, Chicago.

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

SECTION ON RADIOLOGY

Warren W. Furey .....Chairman
Harry W. Ackemann.....Secretary

TUESDAY AFTERNOON, MAY 21, 1940

1:30—"Unusual Chest Conditions in Children." Arthur Parmelee and Fay Squire, Oak Park.

This report has to do with x-ray findings in the lungs of several children that could not be accurately diagnosed without a careful study of the clinical picture. It concerns particularly, areas of infiltration resembling pneumonia in which no clinical symptoms of pneumonia were seen in the patient. The x-ray signs disappeared spontaneously in a comparatively short time. The difficulties of differential diagnosis are emphasized. The recognition of such conditions is particularly important now that many cases of abortive pneumonia are being seen as a result of the newer methods of therapy.

1:50—"A Few Unusual Anomalies of the Urinary Tract." J. Paul Bennett, Chicago.

Three cases are reported of a solitary congenital cyst in the upper pole of a kidney, the cyst in each case communicating with the renal pelvis and containing stones. Cases are also illustrated of pelvic kidneys and unilateral kidneys and one case of a ureter which divides and re-unites before reaching the renal pelvis. A horseshoe kidney is shown containing a calculus.

Discussion opened by M. J. Hubeny, Chicago.

2:10—"The Importance of Growth Arrest Lines in Radiological Diagnosis and Prognosis." John A. Siegling, Urbana.

Too little emphasis has been placed on lines observed in the roentgenograms of growing children. While in some instances, they may be of academic interest only, there are times when they are of extreme importance in radiological diagnosis and prognosis. The physiology of bone growth is reviewed briefly and the method of formation of lines demonstrated. The diagnostic importance of lines in lead poisoning is stressed, and their prognostic value is illustrated in cases of disease, fractures, tumors and other lesions which involve the epiphyseal cartilage. Lantern slides will be used to illustrate the material.

Discussion opened by Cesare Gianturco, Urbana.

2:30—"Gynecography."

"Gynecography." Ralph A. Reis and Robert A. Arens, Chicago.

Pelvic pneumoperitoneum combined with utero-salpingography clearly visualizes the pelvic status on a Roentgen film. The gas permits organ outlines and relationships to be clearly registered by means of the contrasting gaseous medium. The iodized oil shows the type of uterine cavity, tubal lumens, and the site of possible tubal obstruction. The development of these methods of Roentgen visualization when combined as outlined has been a most useful diagnostic aid in Gynecology. It is a safe and harmless procedure in selected cases and has special value in the diagnosis of obscure and/or disputed gynecologic conditions. The technique, instrumentarium and typical cases will be discussed.

Discussion opened by Robert A. Arens, Chicago; and Fred Decker, Peoria.

2:50—"X-Ray Therapy in Pneumonia." Fred Decker, Peoria.

A study of pneumonia patients entering a moderate sized hospital over a period of two years, will be given. This study will include a list of various types of pneumonia, with particular reference to the type of treatment used. The three methods of treatment, including serum, sulphanilamide and x-ray therapy, will be considered.

Discussion opened by E. E. Barth, Chicago.

3:10—"The High Spots in Bronchiectasis." Perry B. Goodwin, Peoria.

This will be a summary of the etiology, pathology, symptoms, diagnosis and methods of treatment.

Discussion opened by C. D. Sneller, Peoria.

3:30—Case Report—"Carcinoma of the Bladder with Roentgen Films of the Lesions before and after Extensive Deep Radiation Therapy." George M. Landau, Chicago.

3:50—Case Report—"An Interesting and Unusual Gastrointestinal Case with Three Separate and Distinct Lesions." Harry B. Magee, Peoria.

TUESDAY EVENING, MAY 21, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

WEDNESDAY MORNING, MAY 22, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions)

THURSDAY MORNING, MAY 23, 1940

Meeting of all Sections.

(For complete program and abstracts of papers, See Joint Sessions).

SECTION ON PEDIATRICS

H. William Elghammer.....Chairman
Bert I. Beverly.....Secretary

WEDNESDAY AFTERNOON, MAY 22, 1940

"Physiological Changes Incident to Puberty." Frederic T. Jung, Assistant Professor of Physiology, Northwestern University, Chicago.

"Menstrual Disorders During the Adolescent Period." Ralph E. Campbell, Associate Professor Obstetrics and Gynecology, University of Wisconsin, Madison, Wisconsin.

"Obesity in Childhood and Adolescence." L. H. Newburgh, Professor of Medicine, University of Michigan, Ann Arbor, Michigan.

"Educational Problems of Adolescence." Ernest O. Nelby, Ph.D., Dean, School of Education, Northwestern University, Chicago.

SECTION ON OBSTETRICS AND GYNECOLOGY

W. A. Malcolm.....Chairman
Herbert E. Schmitz.....Secretary

"Recent Advances in Gynecologic Endocrinology." J. P. Greenhill, Chicago.

"Organization of Obstetrical Work in Rural Hospitals." Jennings Litzenberg, Minneapolis, Minn.

Discussion opened by Milton E. Bitter, Quincy; O. H. Crist, Danville; W. M. Cooley, Peoria; and R. R. Loar, Bloomington.

(Each discussant allowed ten minutes).

"Toxemia of Pregnancies in the Galesburg Cottage Hospital." Edwin N. Nash, Galesburg.

"Toxemia of Pregnancies at the Cook County Hospital." Chester C. Doherty, Chicago.

"Lactation and Involution." R. R. Loar, Bloomington.

"The Use of Seconal as an Analgesic Agent During Labor." William C. Cummings, Evanston.

PROGRAM ON PATHOLOGY

TUESDAY MORNING, MAY 21, 1940

9:00—"Value of Routine Serological Tests." Victor Levine, Chicago.

Discussion opened by I. Davidsohn, Chicago.

9:30—"Value of Biopsy." Frank B. Queen, Chicago.

Discussion opened by Milton G. Bohrod, Peoria.

10:00—"Clinico-Pathological Conference." Edwin F. Hirsch, Chicago.

11:00—"Organization and Function of Tumor Clinic in Voluntary Hospitals." H. Prather Saunders, Chicago.

Discussion by Bowman C. Crowell, Chicago; John A. Wolfer, Chicago; Roswell T. Pettit, Ottawa; Josiah J. Moore, Chicago.

CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY

Harold A. Vonachen, President.....Peoria, Illinois
Urban E. Gebhard, Vice-President...Milwaukee, Wis.
Frank P. Hammond, Secretary-Treasurer.Chicago, Ill.
Edward C. Holmblad, Program Chairman.Chicago, Ill.

TUESDAY MORNING, MAY 21, 1940

9:30—"Medicolegal Typing of Occupational Disease Cases." (With four illustrative case histories.) C. O. Sappington, Chicago.

The scientific evaluation of etiology, differential diagnosis, and disability furnishes the three variables used to type the medicolegal possibilities of occupational disease cases.

Etiology specifically involves the use of industrial hygiene procedures in the appraisal of employment exposures; differential diagnosis embraces the establishment of cause-and-effect relationships between the industrial environment and the physical and clinical laboratory findings; disability evaluation includes proving that disability is directly caused by an occupational disease.

In Case Type I, the employment exposure was positive, and there was occupational disease with resulting disability.

In Case Type II, the employment exposure was negative, but there was previously existing occupational disease with resulting disability.

In Case Type III, the employment exposure was negative, and there was no occupational disease, but disability was caused by non-occupational disease.

In Case Type IV, there was negative employment exposure, no occupational disease and no disability.

Case history protocols with industrial, medical and medicolegal data are used to illustrate the foregoing types.

10:00—Ten Minute Reports followed by Round Table Discussion as to "The Newer Developments and Present Status of Following Industrial Problems."

"Absenteeism." George W. Stabens, Springfield and James H. Finch, Champaign.

"Physical Examinations." Urban E. Gebhard, Milwaukee, Wisconsin.

"Specific Loss Appraisal." V. S. Cheney, Chicago.

"Hernia." Will Lyon, Chicago.

"Back Injuries." Frederick W. Slobe, Chicago.

"Syphilis in Industry." Paul Palmer, Peoria.

"Economics of Industrial Medicine and Surgery." James A. Valentine and Fred M. Miller, Chicago.

TUESDAY NOON, MAY 21, 1940

12:00—Luncheon.

TUESDAY AFTERNOON, MAY 21, 1940

Joint Session with Section on Surgery.

2:00—"Wound Healing." Michael Mason, Chicago.

Discussion opened by Hilger P. Jenkins, Chicago.

"Treatment of Infected Wounds." David J. Lewis, Springfield.

"Postoperative Thrombosis and Embolism." Geza de Takats, Chicago.

"Treatment of Compound Fractures." William R. Cubbins, James J. Callahan, and Carlo S. Scuderi, Chicago.

"Treatment of Burns." Chester R. Zeiss, Chicago.
(For abstracts of papers, See Section on Surgery.)

PHYSICIANS' ASSOCIATION DEPARTMENT OF PUBLIC WELFARE STATE OF ILLINOIS

George Perkins.....Acting President
J. W. Klapman.....Secretary-Treasurer

TUESDAY MORNING, MAY 21, 1940

9:00—12:00

"Pick's Disease." D. Levitin, Chicago.

This is a study of a 52 year old woman having clinically diagnosed and pathologically verified Pick's Disease. Life situation and other tests are presented demonstrating the course of the disease processes. Encephalographic studies and pathological slides are also presented.

Discussion opened by C. Von Der Heide.

"Comparative Effects of Coma Doses of Insulin Administered Intravenously and Subcutaneously in Psychotic Patients." Irving C. Sherman, John C. Mergener, Abraham A. Low, Chicago.

A comparative study was made of coma doses of amorphous insulin administered subcutaneously and intravenously in psychotic patients. It was found that there was a more rapid response to the latter mode of injection. This was shown by a more rapid drop in blood sugar and a shorter pre-coma period. There was no constant relation between the amount of insulin necessary to produce coma by the two methods of administration.

Discussion opened by G. Heilbrunn, Elgin.

"Juvenile Huntington's Chorea." Eugene Falstein, Theodore F. Stone, Chicago.

A careful study of the known cases of Huntington's Chorea in the Illinois State Hospitals, with particular reference to the Elgin State Hospital, where records dating back more than 35 years have been reviewed, has revealed two cases in which mental and motor symptoms of the disease had definitely appeared before the age of seventeen. Thorough studies, including geneological investigations, are presented, with comments regarding their implications on the generally accepted concepts of the disease.

Discussion opened by R. R. Grinker, Chicago.

"Nitrogen Treatment in Schizophrenia." Carl E. Lengyel, Elgin.

Acute anoxia was produced by pure nitrogen inhalations in several cases of schizophrenia. This was done in order to obtain a state of sympathetic nervous stimulation. The result of this treatment in a series of cases is being discussed and compared with results gained with metrazol and insulin therapy in a similar group of cases.

Discussion opened by I. Finkelman, Chicago.

SYMPOSIUM ON PROBLEMS IN NEUROSYPHILIS

"Cardiovascular and Systemic Morbidity Following Hyperpyrexia in Central Nervous System Syphilis." Alan A. Lieberman, Charles Katz, Elgin.

Studies were made in more than 100 cases of neurosyphilis on the effect of malaria and typhoid vaccine therapy with an evaluation of the cardiovascular and systemic changes resulting therefrom. In view of the drastic nature of malaria treatment, suggestions are made regarding the selection of patients for such therapy and for a modification of typhoid vaccine therapy.

Discussion opened by B. Hilkevitch, Chicago.

"Modification of the Use of Typhoid Vaccine in the Production of Hyperprexia." Jack Weinberg and H. H. Goldstein, Chicago.

This paper reports on experiments on rise of temperature above 103°F. in 84.60% of the 801 times it was used. Modification consists chiefly of the use of smaller doses followed by a larger one at the height of the fever produced by the first injection.

Discussion opened by Francis J. Gerty, Chicago.

"Surgery in Syphilitics with a Study of Cases in Mental Hospitals." George A. Wiltrakis, Anthony V. Partipilo, Louis Olsman, Chicago.

In the consideration of patients for operation, it is desirable to know if the prognosis and the ultimate outcome will be modified by the presence of a syphilitic infection. Will a luetic involvement of the central nervous system affect the prognosis in general surgery? With this prospectus, a study was made in several State Hospitals of the operations performed on patients with syphilis, chiefly cases of general paralysis. Thus, an attempt was made to determine the advisability and prognosis of elective and emergency surgery in this class of patients.

Discussion opened by B. Barker Beeson and William J. Pickett, Chicago.

Role of Neurosyphilis in Disturbances of "Anal Sphincter Tone." (To be read by title.) Bernard L. Greene, Louis H. Block, Elgin.

SECRETARIES' CONFERENCE

A. R. Brandenberger, Chairman.....Danville
A. R. Bogue, Vice-Chairman.....Rochelle
Carl E. Clark, Secretary.....Sycamore

TUESDAY EVENING, MAY 21, 1940

LA SALLE ROOM—HOTEL PERE MARQUETTE

6:00—Dinner Meeting.

"Post Graduate Services for County Medical Societies." Robert S. Berghoff, Chairman, Scientific Service Committee, Chicago.

"How Post Graduate Services for County Medical Societies Can Be Improved." Harold M. Camp, Secretary, Illinois State Medical Society, Monmouth.

"Relationship of the Secretary's Office to the Educational Committee." Charles P. Blair, Member Educational Committee, and Secretary, Warren County Medical Society, Monmouth.

"Participation of Local County Society Members in all Programs of the County." Roswell T. Pettit, Secretary, LaSalle County Medical Society, Ottawa.

Round Table Discussion of Problems of County Secretaries.

H. Prather Saunders, Secretary, Chicago Medical Society, Chicago.

Harlan English, Danville.

A. R. Brandenberger, Secretary, Vermilion County Medical Society, Danville.

William R. Marshall, Secretary, DeWitt County Medical Society, Clinton.

PROGRAM FOR WOMEN PHYSICIANS

The Illinois State Medical Society will be host to the Women Members of the State Medical Society at a dinner in Peoria, Tuesday Evening, May 21, 1940.

The local Chairman of Arrangements is Dr. Margaret B. Meloy of Peoria. Membership tickets in the State Society should accompany requests for reservation.

The following is the tentative Dinner Program:

Short Address—Dr. Elizabeth R. Miner, President Illinois State Branch No. 17 A. M. W. A.

Other addresses by Dr. Nelle S. Noble, Des Moines, Iowa, President A. M. W. A.; Dr. Bertha Van Hoosen, Chicago; Dr. Elizabeth B. Ball, Springfield; Dr. Esther S. Hodel, Morton; Dr. Carolyn N. MacDonald and others.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 21, 1940

3:00—First meeting of the House of Delegates called to order by the President, James H. Hutton, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees, Introduction of Resolutions, and for the transaction of other business which may come before the House.

THURSDAY MORNING, MAY 23, 1940

9:00—Second meeting of the House of Delegates called to order by the President for the election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same, Action on Resolutions, and for the transaction of other business to come before the House.

PRESIDENT'S DINNER

The Annual Dinner honoring the President of the Illinois State Medical Society, will be held on Wednesday Evening, May 22, at 7:00 o'clock. The dinner will be held in the large Hotel Pere Marquette Ball Room.

At this 1940 Meeting commemorating the One Hundredth Anniversary of the Society, some special features have been arranged for the President's Dinner. Suitable musical numbers will be presented during and after the service, and as a special attraction, Mr. Strickland Gilliland, noted humorist, columnist, and feature writer of Washington D. C. will give one of his famous addresses on "The Low Down on the Higher Ups in Washington."

The Peoria Committee with Dr. E. E. Nystrom as chairman, will have a large committee making the necessary arrangements, and also for the purpose of selling tickets for this important function and it is hoped that every member who attends the meeting will be present at the Dinner on Wednesday Evening.

(Insert here, the cut of Strickland Gilliland).



Strickland Gilliland

VETERANS' SERVICE COMMITTEE DINNER

TUESDAY EVENING, MAY 21, 1940

The annual dinner of the Veterans' Service Committee will be held on Tuesday evening May 21, 1940 at 6:00 p. m.

Dr. F. O. Fredrickson, Chairman of the Committee, will officiate as the presiding officer.

PROGRAM

Call to Order.

1. Presentation of Colors—
   Commander—Peoria Post No. 2.
2. Bugle: To the Colors—
   Carl Steinhoff.
3. "Newer Aspects of Medical Service in War."
   John Dibble, Lieutenant Colonel, Medical Corps, United States Army, Sixth Corps Area.
4. "Americanism."
   Major Leigh N. Bittinger, Department Commander, Department of Illinois, American Legion, Commander Onarga Military Academy.
5. "Remarks."
   Karl A. Gillig, Department Commander, Veterans of Foreign Wars.
6. Moment of Silence.
7. Retirement of Colors.

MATERNAL WELFARE COMMITTEE LUNCHEON

The Maternal Welfare Committee of the Illinois State Medical Society will have its annual luncheon at the Hotel Pere Marquette on Wednesday, May 22, 1940 at 12:00 noon.

The program will consist of a talk by Dr. T. B. Williamson, Mt. Vernon, Chairman of the Committee which will deal with the work in general as carried on by the Committee, and will be illustrated by slides.

Dr. J. E. Litzenberger of Minneapolis, Minnesota will give a fifteen minute talk on the Minnesota Obstetrical Hospital Plan.

Members of the Council, all officers of the State Society, and representatives of the Department of Public Health, State of Illinois will be invited to attend.

Tickets will be on sale at the annual meeting.

ALUMNI LUNCHEONS

NORTHWESTERN UNIVERSITY—COLLEGE OF MEDICINE

The Alumni of Northwestern University College of Medicine will have a luncheon meeting in the Early American Room, Hotel Pere Marquette at 12:00 o'clock on Wednesday noon, May 22, 1940. Dr. George Parker of Peoria and Dr. Walter H. Nadler of Chicago have been responsible for the arrangements.

Tickets will be on sale at the registration booth, and the sale will close at 9:00 o'clock Wednesday morning.

UNIVERSITY OF ILLINOIS—COLLEGE OF MEDICINE

The Alumni Association of the College of Medicine, University of Illinois, has made arrangements for their luncheon to be held on Wednesday noon, May 22, 1940 at 12:00 o'clock noon, in the LaSalle Room of the Hotel Pere Marquette.

Dr. C. H. Phifer of Chicago appointed Dr. W. A. Malcom, assisted by Dr. E. C. Kelly and Dr. K. N. Petri, all of Peoria, to make the local arrangements.

Tickets will be on sale at the registration booth.

ATTENTION—GOLFERS

Dr. James H. Hutton, President of the Illinois State Medical Society, is donating a suitable trophy for the champion golfer, this to be retained by the winner for one year, then to be brought to the meeting on successive years to be played for by the medical golfers.

Dr. Harold F. Diller, Chairman of the Golf Committee for the Centennial Meeting announces that the play will take place on Monday, May 20 at the Country Club of Peoria. The Committee has decided to award the "Hutton Trophy" to the player with the lowest gross score. The play will start at 1:00 P. M., Monday, May 20, and other prizes will be awarded for certain types of handicap play, blind bogeys, etc.

It will be possible for golfers from out of the city to arrange their own foursomes, and for those who have not done so, one or two local golfers will join visiting players to make up foursomes. Plans have been made to hold a dinner for golfers at the clubhouse in the evening, and all members desiring to participate in the golf matches should write to Dr. Diller, addressing him at 410 Main Street, Peoria. The Country Club of Peoria is an eighteen hole course located on Grand View Drive overlooking the beautiful Illinois River, and it is truly a fine course.

There are five eighteen hole golf courses in Peoria all of which will be available to the medical profession during the meeting, and those who are unable to participate in the tournament on May 20, will be permitted to play on other days during the Annual Meeting. Physicians desiring additional information, or who desire to play for the Hutton Trophy, should write to Dr. Diller as early as possible.

ILLINOIS STATE MEDICAL SOCIETY
ONE HUNDREDTH ANNUAL MEETING

Peoria, Illinois

May 21, 22, 23, 1940

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

OFFICERS

MRS. C. C. WINNING, *President*....East St. Louis
MRS. H. J. DOOLEY, *President-Elect*..River Forest
MRS. M. A. NIX, *1st Vice-President*.....Princeton
MRS. A. F. GAREISS, *2nd Vice-President*..Chicago
MRS. D. DICKERSON, *3rd Vice-President*.Danville
MRS. C. C. KANE, *Corresponding Secretary*.....
.....East St. Louis
MRS. V. M. SERON, *Recording Secretary*.....Joliet
MRS. E. G. BEATTY, *Treasurer*.....Pontiac

COUNCILORS

MRS. A. E. McCORNACK, 1st District.....Elgin
MRS. C. R. BATES, 2nd District.....Ladd
MRS. J. P. SIMONDS, 3rd District.....Chicago
MRS. A. H. BRUMBACK, 3rd District.....Chicago
MRS. W. J. WANNINGER, 3rd District....Chicago
MRS. KENNETH C. BAKER, 4th District.Galesburg
MRS. HARRY OTTEN, 5th District.....Springfield
MRS. HAROLD SWANBERG, 6th District..Quincy
Seventh District
MRS. A. F. DIETRICH, 8th District.....Fithian
MRS. E. W. BURROUGHS, 9th District...Ridgway
MRS. C. C. KANE, 10th District.....East St. Louis
MRS. MAT BLOOMFIELD, 11th District....Joliet

CHAIRMEN OF STANDING COMMITTEES

ORGANIZATION—Mrs. H. J. Dooley..River Forest
PRESS & PUBLICITY—Mrs. C. A. Stuart.Oak Park
LEGISLATION—Mrs. Harry Otten.....Springfield
PRINTING—Mrs. William Raim.....Oak Park
PROGRAM—Mrs. C. Otis Smith.....Oak Park
PUBLIC RELATIONS—Mrs. Frank Murphy.....
..... Chicago
REVISIONS—Mrs. R. K. Packard.....Chicago
HYGEIA—Mrs. W. J. Wanninger.....Chicago
FINANCE—Mrs. F. P. Hammond.....Chicago
ARCHIVES—Mrs. Reid Owen Howser....Oak Park
HOSTESS—Mrs. A. H. Brumback.....Chicago
BENEVOLENCE FUND—Mrs. Herbert B. Henkel
..... Springfield
CREDENTIALS & REGISTRATION—Mrs. M. A. Nix .....Princeton

CONVENTION—
Mrs. Milo Easton, *Chairman*.....Peoria
Mrs. John P. Crotty, *Co-Chairman*...East St. Louis

ADVISORY COMMITTEE

DR. CHARLES S. SKAGGS, *Chairman*.....
.....East St. Louis
DR. JOHN R. NEAL.....Chicago
DR. NATHAN S. DAVIS, III.....Chicago
DR. HAROLD M. CAMP.....Monmouth
DR. EDWIN S. HAMILTON.....Kankakee

PARLIAMENTARIAN—Mrs. Lucius Cole.....
.....River Forest

WOMAN'S AUXILIARY PROGRAM

All General Meetings and Social Activities Are Open to All Doctors' Wives.

MONDAY, MAY 20, 1940

1:00-9:00 P. M.
Registration—Pere Marquette and Jefferson Hotels.

TUESDAY, MAY 21, 1940

8:00 A. M. Registration—Pere Marquette and Jefferson Hotels.

10:00 A. M. Pre-convention Board Meeting—Jefferson Hotel. (Board Members Only.)
Mrs. Charles C. Winning, President.

11:00 A. M. "School of Instruction on Auxiliary Activities." Jefferson Hotel. (Open to all doctors' wives.)
Mrs. George Walbright, Presiding.
Mrs. Harry Otten, Co-Chairman.

12:30 Luncheon—Jefferson Hotel, French and Jefferson Rooms. (Open to all doctors' wives.)
Mrs. Charles C. Winning, Presiding.
Mrs. Carl Sibilsky, Local Chairman.
Speakers:
Address of Welcome. Mrs. Orville Barbour.
Convention Announcements. Mrs. Milo Easton.
Address. Mrs. Rollo Packard, President National Auxiliary.

2:00 P. M. General Meeting—Gold Room, Jefferson Hotel. (Open to all doctors' wives.)
Mrs. Charles C. Winning, Presiding.
Invocation. Bishop W. L. Essex, Bishop Quincy Diocese Episcopal Church.
Welcome. Mayor David McCluggage.
Response. Mrs. William Raim.
(Caterpillar Tractors.) (Open to all doctors' wives.)

3:45 P. M. Tour of Holt Manufacturing Company. Cars leaving Liberty Street entrance of Jefferson Hotel.

6:30 P. M. Dinner- Pere Marquette Ball Room, followed by Fashion Revue of private collection from New York and Chicago, with professional models. (Open to all ladies attending the convention.)

WEDNESDAY, MAY 22, 1940

8:00 A. M. Registration—Pere Marquette and Jefferson Hotels.

8:00 A. M. Board Breakfast. (Board Members Only.)

9:15 A. M. Busses leave for Breakfast—Peoria Country Club. (Open to all doctors' wives.)

9:30 A. M. General Meeting—Ball Room, Jefferson Hotel. (Open to all doctors' wives.)
Mrs. Charles C. Winning, Presiding.
Memorial Services. Mrs. Orville Barbour, Chairman.
Scripture and Prayer. Mrs. A. A. Knapp.
Solo—Prayer Perfect (Malotte). Mrs. Clarence Magaret.
In Memoriam.
Memorial Roll Call.
Candle Light Service.
Remembrance Flowers. Mrs. Orville Barbour.
Solo—Lord's Prayer (Stenson). Mrs. Clarence Magaret.
"Taps" (All stand in memory.) Mrs. Clarence Magaret.

12:00—Return from Country Club Breakfast.

12:45—President's Luncheon, French and Jefferson Room, Jefferson Hotel.
Mrs. Charles C. Winning, Presiding.
Mrs. Allen Foster, Local Chairman.
Announcements. Mrs. Milo Easton, Convention Chairman.
Speakers: (To be announced later.)
Followed by Mrs. E. C. Kelly, Chairman (Reception.)

3:30 P. M.—Post Convention Board Meeting. (Board Members Only.)
Mrs. H. J. Dooley, Presiding.

5:00 P. M.—Open House held by Peoria doctors and their wives. (Open to all doctors and their wives attending the convention.)
Indicate at time of registration if you wish to attend open house and also if you have already been asked. If not, Hostess Committee will arrange for you.

7:00 P. M.—President's Dinner Dance.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 21, 1940

12:30—Luncheon—Jefferson Hotel, French and Jefferson Rooms.

2:00 P. M.—Tour of City for ladies not attending Auxiliary activities.

3:45 P. M.—Tour of Holt Manufacturing Company. (Caterpillar Tractors.) (Cars leaving Liberty Street entrance of Jefferson Hotel.)

6:30 P. M.—Dinner—Pere Marquette Ball Room, followed by Fashion Revue.

WEDNESDAY, MAY 22, 1940

9:15 A. M.—Busses leave for Breakfast—Peoria Country Club. (Busses leave Main Street entrance of

Pere Marquette Hotel, and Fulton Street entrance of Jefferson Hotel.)

12:00—Return from Country Club Breakfast.

12:45—President's Luncheon, French and Jefferson Room, Jefferson Hotel.

5:00 P. M.—Open House held by Peoria Doctors and their wives.

7:00 P. M.—President's Dinner Dance.

SCIENTIFIC EXHIBITS

SHRINE MOSQUE

Frank J. Jirka, Chairman.....Chicago
Nathan Smith Davis, III, Director of Exhibits .....Chicago

Booth 1. "Ectopic Pregnancy." Frederick H. Falls, Miss Charlotte S. Holt, Illinois State Department of Public Health, and University of Illinois College of Medicine, Chicago.

A series of ten bas-relief models cast in special plaster composition and painted in natural colors, depicting various types of ectopic pregnancy, such as interstitial, ovarian, isthmic, ampullary and escondary abdominal, a colpocentesis of a pelvic hematocele, broad ligament hematoma, a fibroid uterus causing compression of tube, and bilateral tubal pregnancy. A model showing the story of normal fertilization and nidation and sites of ectopic implantation. These will be types of ectopic pregnancy as seen at operation by the surgeon. Lettered charts outlining etiology, diagnosis, treatment and mortality statistics will be added. Photomicrographs of each type will show as transparencies, and a unique x-ray picture of a ruptured interstital ectopic pregnancy with a baby weighing five pounds, will be shown.

Booth 2. "Cerebral Manifestations in the Newborn." Abraham Levinson, Cook County Hospital, Chicago.

A series of charts outlining the etiology, symptomatology, and treatment of Cerebral Manifestations of the Newborn, including anoxemia, cerebral agenesis, acute infections, tetany and hypoglycemia. The exhibit will also include lantern slides and specimens.

Booth 3. "The Neurocirculatory Clinic. Its Scope and Material." Geza deTakats, William C. Beck, Joseph H. Jesser, Donald Miller, P. J. Sarma, University of Illinois College of Medicine.

Instead of separating patients in medical, surgical, orthopaedic, and neuro-phychiatric clinics, it is the doctors that are grouped around the patient. As a general principle, a synthesis of knowledge is emphasized instead of a fragmentation by overspecialization. This is demonstrated on five disease entities, namely: congenital vascular anomalies, varicose veins, peripheral vascular disease, hypertension, pulmonary embolism.

In each group the diagnostic methods, the types of treatment and the results are shown by charts, drawings, photographs and individual case histories. Such a group-study improves diagnosis, accumulates material for undergraduate and postgraduate teaching and stimulates clinical research.

Booth 4. "Segmental Retrograde Sclerosis in the Treatment of Leg Varices." James Graham, Springfield Clinic, Springfield.

Models and translites illustrate four classes of leg varices, bases on valvular competency. Saphenous vein ligation, combination with retrograde injection of sclerosing substance, is advocated for those classes in which valvular incompetency plays a major role. In this connection, segmental retrograde sclerosis by the ureteral catheter method.

Booth 5. "Peripheral Vascular Diseases." G. H. Marquardt, T. R. VanDellen, R. C. Roberts, S. Perlow, and Nathan S. Davis, III, Florsheim Clinic, Northwestern University College of Medicine, Chicago.

Results of management of those with peripheral arteriosclerosis and thrombo-angiitis obliterans and those with vasospastic arterial disease over a period of eight or ten years. Plethysmographic studies before and after various types of therapy.

Booth 6. "Avitamosis in the Alcoholic." Don C. Sutton and John Ashworth, Northwestern University College of Medicine, Chicago.

The exhibit will consist of charts, color transparencies and still projection of color transparencies. The charts will be descriptive of especially the neuritis and pellagra lesions. A chart of the vitamins involved, and an outline of treatment.

Booth 7. "Clinical Cystometry. Presentation of a New Cystometrograph." Herbert E. Landes and Harold C. Voris, Departments of Urology and Neurosurgery, Loyola University College of Medicine, Mercy Hospital and Loyola Clinics, Chicago.

Exhibit consists of photograph of cystometrograph in operation. Model of instrument itself. Twenty-six charts showing a wide variety of tracings obtained in different neurologic lesions together with a chart showing innervation of bladder and urethra and finally a printed chart summarizing the content of the exhibit.

Booth 8. "Posture Plays an Important Part in the Physical Therapy of Bed and Convalescent Patients." American Physiotherapy Association, Miss M. C. Winters, Chicago.

Six posters, 22 x 28 inches with photographs showing the following: Good and bad posture of an arthritic in bed with a view to preventing the following deformities—poor chest posture affecting vital capacity, forward head, knee flexion contractures, adduction and inward rotation of shoulders, adduction and external rotation of legs, foot drop and wrist drop;

Poor posture in a wheel-chair showing swelling, in a lower leg and the correction;

Instruction to a fracture case in a walker to precede instruction in walking with crutches;

Instruction in crutch-walking to a fracture case showing crutches of incorrect length poorly placed, and soft shoes with corrections.

Booth 9. "Disease of the Lung." E. J. Kraus and H. M. Pollak, St. Francis Hospital, Peoria.

Pathological specimens of various lung diseases; histological photographs, case histories and x-ray films.

Booth 10. "Pulmonary Tuberculosis. Diagnosis and Treatment by Surgical Collapse." Municipal Tuberculosis Sanitarium, Chicago.

Four illuminated cabinets demonstrated by x-ray films and pathologic specimens, pulmonary tuberculosis in all stages of the disease.

Collapse treatment and the results obtained by pneumothorax and surgical procedures.

Booth 11. "End Results in Pulmonary Tuberculosis." Jerome R. Head, Edward Sanatorium, Naperville,

This exhibit will consist of printed charts and tables showing the five-year end results in 500 cases of pulmonary tuberculosis. There will be slides also showing the results of the various types of cases.

Booth 12. "The Useful Power Output of Short Wave Therapy Generators." Eugene Mittelmann and H. J. Holmquist, Northwestern University, Chicago.

The power output of a short wave therapy generator, which can be converted into heat in the body of the patient, is only a fraction of the power which is measured by lamp loads and is usually claimed as the available output of the generator. Exposition and demonstration of simple high frequency watt meter for measurement of power actually absorbed by the patient. Presentation of data showing correlation between heating in deep tissue and wattage absorbed. Evaluation of different types of short wave generators on the basis of their thermal effectiveness.

Booth 13. "Aerobiology as Applied to Allergy." Oren C. Durham, Abbott Laboratories, North Chicago.

Apparatus and methods used and results obtained in 350 uniform seasonal atmospheric surveys (1925-1939) and 400 upper air tests of pollens, fungus spores and insect particles. Most of the work has been done in the United States, Alaska and Canada (cooperation of United States Weather Bureau and Canadian Meteorological Service). Limited data for Cuba, Mexico, Argentina and Japan. Maps, Tables and Graphs, including new "ragweed pollen index" of North America. Technique of identification and counting will be demonstrated. A reference collection of 400 pollen and fungus spore specimens will afford abundant opportunity for practice.

Booth 14. "Serum as Substitute for Blood in Transfusions." S. O. Levinson, H. Necheles, F. Neuwelt, Michael Reese Hospital; Samuel Dentsch, Serum Center and Department of Gastro-Intestinal Research; Chicago.

Pictures, charts, graphs, tables, hymograph records and short explanatory descriptions of experiments proving the practicability and advantages of serum versus blood transfusion. Pictures of bleeding of donors and of processing of serum and its preparation for storage, transportation and transfusion. Charts of serum transfusion in patients. Complete paper appeared in A.M.A. Journal of February 10, 1940.

Booth 15. "Occupational Hazards." Department of Public Health, State of Illinois. A. C. Baxter, Director.

Industrial Hygiene Exhibit consisting of:
(1) Industrial Lead Poisoning.
(2) Occupational Anemias.
(3) Dust Diseases in Industry.

Booth 16. "Disease of the Thyroid Gland." Arnold S. Jackson, The Jackson Clinic, Madison, Wisconsin.

Models and charts on diagnosis and treatment of cretins. Maps, charts, showing growth of cretinism and distribution of the 500 cases reported in the United States. Colored illustrations showing technique of thyroidectomy by electro-surgery for exophthalmic goiter. Colored illustrations and models of the various types of goiter, their distinguishing characteristics, and the methods of treatment. Illustrations, charts and data on hypothyroidsim and myxedema illustrating typical and atypical cases, signs, symptoms, methods of treatment and results. Moving pictures of cretins, diagnosis of various types of goiter and the technique of thyroidectomy.

Booth 17. "The Minutemen of American Medicine." The National Physicians Committee for the Extension of Medical Service.

Photostats of Propaganda Material favoring political regimentation of medical practice, and of editorials, news items, etc., regarding the activities, aims and objectives of the Committee.

Copies of material prepared to educate the public as to the accomplishments of a free American Medical Profession.

Copies of an illustrated edition of "Priceless Heritage" will be included.

Booth 18. "Treatment of Seminal Vesiculitis by Transurethral Catheterization and Dilation of the Ejaculatory Ducts." Robert H. Herbst and James W. Merricks, Urological Department, Rush Medical College, University of Chicago, and Presbyterian Hospital, Chicago.

Transparent postmortem specimens showing seminal vesicles injected with red lead and cleared by the Spalteholtz method. X-Ray films showing clinical pathologic changes in the vesicles and the results.

PERE MARQUETTE HOTEL

Booth I. "Technique of Subtotal Thydroideetomy Under Local Anesthesia." David A. Bennett, Coleman Clinic, Canton.

Demonstration of technique used in subtotal throideetomy by use of local anesthesia. Demonstrated by drawings and colored paintings of the various steps or stages of the operation. Colored movies are also used in the booth which show technique of the operation.

Booth II. "Plastigut—A New Suture Development." Joseph E. Bellas, The Collins Clinic, Peoria.

A comparative study of suture reactions with current sutures and Plastigut. A new classification of sutures is brought forth as a basis for future evalution of sutures. Plastigut is a new suture of which plastics are the essential components. Plastigut is supported by extensive, experimental, clinical and microphotographic studies and is offered to the surgical profession as an approach to the ideal suture.

Booth III. "What Radiation Technique Gives the Best Clinical Results in Uterine Cervical Cancer?" Harold Swanberg, Quincy X-Ray and Radium Laboratories, Quincy.

Exhibit will consist of charts showing the results obtained and the techniques of radiation being used at the leading radio-therapeutic centers of the world in the treatment of uterine cervical malignancy.

Booth IV. "The Tumor Clinic in the Small Private Hospital." Ravenswood Hospital Tumor Clinic, H. P. Saunders, Ravenswood Hospital, Chicago.

An exhibit demonstrating the method of establishing a tumor clinic in a small private hospital. The method of conducting the clinic and advantages of the clinic to patients, physicians and the hospital.

(a) Exhibit includes charts showing activities of the clinic such as examining, diagnosing and outlining treatment of tumor cases.

(b) Demonstration of cases and specimens before staff members.

(c) Perfection of a follow-up system.

Booth V. "Hemangiomas (Birthmarks)." Frank E. Simpson, Chicago.

Color motion picture of cases treated and technique. Photographs of cases.

Booth VI. "Surgical Pathological Studies of Carcinoma of the Rectum and Colon." R. K. Gilchrist, Rush Medical College, Presbyterian Hospital, Chicago.

This exhibit is a summary of the findings in 125 surgical specimens. The distribution of metastases to the 7000 lymph nodes examined microscopically from these specimens is shown by charts, specimens and illustrations. The results of experimental studies on the manner of spread of carcinoma through the lymph system, are shown. Specimens and charts demonstrate the perforation of diverticula in the presence of carcinoma. The effect of size of tumor, duration of symptoms, grade of tumor, age and sex of patient are shown in their relation to lymphatic metastases.

Booth VII. "Acute Appendicitis." William Kleitsch, R. B. Malcolm, L. J. Rossiter, Warren H. Cole, Department of Surgery, University of Illinois College of Medicine, Chicago.

About six models illustrating the stages of inflammation incident to acute appendicitis with and without perforation. One or two drawings to illustrate dangers incident to catharsis. Several placards supply information regarding incidence, therapy, etc.

Booth VIII. "Controlled Evaporation of Liquid Oxygen. A New and Simple Method of Production of Oxygen Gas at the Bedside." John A. Mathis, and Mr. Roland Milan, Pinckneyville.

Apparatus measures 28 inches diameter by 40 inches in height. No cylinders are used, but liquid oxygen in standard commercial 25 liter container supplies the source of the gas. The apparatus comprises a method of returning liquid oxygen to the gaseous state at any rate of speed desired, under complete control of the operator, together with safety measures which make the apparatus safer than cylinders of the gas under pressure.

This idea and its execution are entirely new, and have not been demonstrated elsewhere. By its use, it is possible to use 6 liters of oxygen per minute at a cost of about 5c per hour. In cylinders, the cost is from 15 to 30 cents per hour. We have tried out the apparatus for two years, and it has no faults or dangers.

Booth IX. "Implantation of the Ureter into the Colon for Exstrophy of the Urinary Bladder. Ureterointestinal Anastomosis." Roy E. Brackin, Rush Medical College, University of Chicago, Department of Surgery, Chicago.

The exhibit consists of photographs of patients before and after transplantation of the ureters to the colon and roentgenological studies, blood findings, clinical reactions and end results up to one year after bilateral ro-signoidal anastomosis in the treatment of extrophy of the urinary bladder. One successful case of twenty years is presented with complete charts of pre- and post-operative blood and urinary tract studies up to one year after operation including bilateral transplantation of the ureters and total cystectomy, one case of three years of age. This method of procedure will be shown by drawings. This was shown in the scientific exhibits of 1939 and the experimental results demonstrated. The present exhibit presents the results in a small number of cases, among whom there were no deaths following the operation. A motion picture in color of the procedure will be shown. This film is about 300 feet.

Booth X. "Liver Disease." Max Schneider and Sidney A. Portis, Michael Reese Hospital, Chicago.

This exhibit will give the clinical approach to the treatment of liver disease, the significance of liver function tests, and the type of tests most suited for the average clinician to use. The charts will show the course of the clinical picture of patients with hepatic disease and the therapy will be carefully outlined.

Booth XI. "Gall Bladder Disease. The Gall Bladder Study Group of Michael Reese Hospital." Heinrich Necheles, Sidney A. Portis and Ralph Bettman, Michael Reese Hospital, Chicago.

The exhibit will show the physiologic, medical and surgical aspects of gall bladder disease with a discussion of the various types of work done in the Department of Physiology relative to the gall bladder. The medical pre- and post-operative management of gall bladder disease will be discussed. The surgical aspect will show the results of the surgical approach to the problem of bile tract disease, the indications for surgery, the types of incisions and the mortality and morbidity statistics all of which will be amply illustrated.

Booth XII. "Plastic and Reconstructive Surgery." Paul W. Greeley, University of Illinois College of Medicine, Department of Surgery, Division of Plastic Surgery, Chicago.

An exhibition of representative cases in photograph demonstrating a wide variety of plastic problems, together with the results obtained. Each case will be briefly discussed by suitable legends or diagrams. On another card will be noted existing axioms of plastic surgery pointing out certain of the more common principles in this field.

Booth XIII. "Allergy of the Nose and Sinuses. Interesting Microscopic Sections from the Temporal Bone." Daniel Hayden, Elmer Hagens, George E. Shambaugh, Jr., Linden Wallner and Paul A. Campbell, Department of Otolaryngology, Rush Medical College, University of Chicago, Chicago.

The exhibit presents enlarged Kodachrome Photomicrographs of various interesting sections taken through the temporal bone. The second part of the exhibit is of various enlarged Kodachrome photomicrographs demonstrating the microscopial changes produced by allergy of the nose and sinuses.

TECHNICAL EXHIBITORS AT THE 1940 ANNUAL MEETING

Abbott Laboratories, North Chicago, Illinois.
A. S. Aloe Company, St. Louis, Missouri.
American Hospital Supply Corporation, Chicago.
Arlington Chemical Company, Yonkers, New York.
Bard Parker Company, Inc., Danbury, Connecticut.
W. D. Bates, Rockford, Illinois.
Bilhuber-Knoll Corporation, Orange, New Jersey.
The Borden Company, New York, N. Y.
Ciba Pharmaceutical Products, Inc., Summit, New Jersey.
The Coca-Cola Company, Atlanta, Georgia.
Curvlite Products, Inc., New York, N. Y.
Davies, Rose & Company, Limited, Boston, Massachusetts.
F. A. Davis Company, Philadelphia, Pennsylvania.
DePuy Manufacturing Company, Warsaw, Indiana.
Doho Chemical Corporation, New York, N. Y.
Eli Lilly and Company, Indianapolis, Indiana.
H. G. Fischer & Company, Chicago, Illinois.
C. B. Fleet Company, Lynchburg, Virginia.
General Electric X-Ray Corporation, Chicago, Illinois.

Gerber Products Company, Fremont, Michigan.

Hamilton-Schmidt Surgical Company, St. Louis, Missouri.

The G. F. Harvey Company, Saratoga Springs, N. Y.

H. J. Heinz Company, Pittsburgh, Pennsylvania.

Horlick's Malted Milk Corporation, Racine, Wisconsin.

Jones Metabolism Equipment Company, Chicago, Illinois.

The "Junket" Folks, Little Falls, New York.

Lederle Laboratories, Incorporated, New York, N. Y.

Libby, McNeill & Libby, Chicago, Illinois.

J. B. Lippincott Company, Philadelphia, Pennsylvania.

A. E. Mallard, Detroit, Michigan.

Mead Johnson and Company, Evansville, Indiana.

Medical Arts Supply Company, Chicago, Illinois. (Lepel High Frequency Laboratories.)

The Medical Protective Company, Wheaton, Illinois.

Mellin's Food Company, Boston, Massachusetts.

The Mennen Company, Newark, New Jersey.

M & R Dietetic Laboratories, Inc., Columbus, Ohio.

The C. V. Mosby Company, St. Louis, Missouri.

V. Mueller and Company, Chicago, Illinois.

Park, Davis & Company, Detroit, Michigan.

Pet Milk Sales Corporation, St. Louis, Missouri.

Petrolagar Laboratories, Inc., Chicago, Illinois.

Philip Morris & Company, Ltd., Inc., New York, N. Y.

W. B. Saunders Company, Philadelphia, Pennsylvania.

Schering Corporation, Bloomfield, New Jersey.

Otto Schweinberger & Company, Moline, Illinois.

Sharp & Dohme, Incorporated, Philadelphia, Pennsylvania.

S.M.A. Corporation, Chicago, Illinois.

Smith, Kline & French Laboratories, Philadelphia, Penna.

E. R. Squibb & Sons, New York, N. Y.

Standard X-Ray Company, Chicago, Illinois.

Frederick Stearns & Company, Detroit, Michigan.

Sutliff and Case Company, Inc., Peoria, Illinois.

White Laboratories, Inc., Newark, New Jersey.

John Wyeth & Brother, Inc., Philadelphia, Pennsylvania.

X-Ray Equipment Company, Chicago, Illinois.

The Zemmer Company, Pittsburgh, Pennsylvania.

NOTES ON TECHNICAL EXHIBITS

ABBOTT LABORATORIES—Booth 46

You are heartily invited to inspect the comprehensive selection of pharmaceutical specialties on display including large volume Intravenous Solutions, Metaphen, Vitamins, Procaine, Ephedrine and Pollen products. Nembutal and Pentothal Sodium, the new intravenous quick-acting short-duration anesthetic will also be featured.

Please feel free to discuss the newer products with the Abbott-trained representatives in attendance.

A. S. ALOE COMPANY—Booth 26

A. S. Aloe Company of St. Louis will display a complete general line of physicians' instruments, supplies and equipment. Aloe Steeline, the improved design in treatment room furniture, will be featured, also the Aloe Diagnostic X-Ray. The display will be in charge of Aloe representative, Val H. Drennan.

AMERICAN HOSPITAL SUPPLY CORPORATION—Booth 29

Interesting new procedures in blood transfusion by the indirect method simplified to an amazing degree and made almost foolproof, will be demonstrated. The latest news on making and the handling of plasma, blood banking, and the use of intravenous fluids, will be available to you also. Several interesting new specialties that promote better patient care will be demonstrated for the first time. You will be cordially welcomed at booth 29.

THE ARLINGTON CHEMICAL COMPANY—Booth 12

The Arlington Chemical Company invites you to inspect their line of Proteins and Pollens for diagnosis and treatment of allergic conditions. And their new product—AMINOIDS. Aminoids represents a combination of amino acids and has proved of marked therapeutic value in malnutrition, underweight and loss of appetite.

Dr. L. A. Kitzman, in charge of the exhibit, will be happy to answer inquiries regarding this new product; also inquiries relative to hayfever, asthma, etc.

BARD PARKER COMPANY, INC.—Booth 44

Bard Parker will exhibit the following products: Rib-Back surgical blades, Renewable Edge scissors, Hematological Case for obtaining blood samples at the bedside, Ortholator for obtaining accurate dental radiographs, Formaldehyde Germicide and Instrument Containers for the rust-proof sterilization of surgical instruments.

W. D. BATES—Booth

Fracture Equipment

BILHUBER-KNOLL CORPORATION—Booth 45

We, the Bilhuber-Knoll Corporation, welcome you. Here you will again meet Mr. Kidwell and Mr. Murhach who are ably prepared to answer questions regarding Dilaudid, Metrazol, Theocalcin, and other N.N.R. products of our manufacture. They will also be glad to acquaint you with our policy relating to the production in our Orange, N. J. plant of "original medicinal chemicals" which merit your continued daily use and your endorsement.



THE BORDEN COMPANY—Booth 10

Full information on BIOLAC, the new *liquid* modified milk for infants, will be available at the Borden Booth.

Also exhibited will be other Borden products for infant feeding, notably Klim, Dryco, Beta Lactose, Merrell-Soule products, and Borden's Irradiated Evaporated Milk.

CIBA PHARMACEUTICAL PRODUCTS, INC.—Booth 24

Ciba Pharmaceutical Products, Inc., will feature their well-known line of specialties, including Coramine, Nupercainal, Digifoline, Trasentin, etc. Latest information, literature and reprints of recent papers by outstanding endocrinologists and investigators will be available describing Perandren and Di-Ovocylin and their clinical application where androgenic and

estrogenic therapy is indicated. Representatives of the firm will be in attendance and will be glad to answer any questions in regard to the products displayed.

THE COCA-COLA COMPANY—Booth 20

The Coca-Cola Company will be host to the doctors calling at their booth, and Coca-Cola will be served for the pause that refreshes.

CURVLITE PRODUCTS, INC.—Booth 53

DAVIES, ROSE & COMPANY, LIMITED—Booth "C"

Davies, Rose & Company, Limited, Boston, Mass., hope that you will visit their headquarters. The preparations that this firm is exhibiting have a world-wide reputation. Physiological or chemical tests are made to assure their standardization. Clinical experience vouches for their dependability.

Mr. G. L. Cunningham will be at the booth to welcome you.

F. A. DAVIS COMPANY—Booth 25

Be sure to visit booth 25 and examine our most recent publications such as Lederer—Ear, Nose and Throat; Bland & Montgomery—Practical Obstetrics; Reimann—Treatment in General Medicine; Stroud—Diagnosis and Treatment of Cardiovascular Disease; Piersol—The Cyclopedia of Medicine; Bland—Gynecology; Smith—proctology for the General Practitioner; Robertson—Diagnostic Signs, Reflexes and Syndromes. F. A. Davis Company.

DePUY MANUFACTURING COMPANY—Booth 14

DePuy Manufacturing Company will exhibit for your consideration, Fracture Appliances to be used by the exacting and careful surgeon. Bone Screws, Bone Plates, Screw Drivers, the new White Type Sterilizing Screw Rack, Friddle Screw Driver, White Type Mortising Chisel, and the improved Lovejoy Drill will be on display. We will have a complete line of Splints for your consideration.

We want you to appreciate the fact that you can come into our Booth and feel at home and there will be no high pressure methods used. Mr. James Rippey will be in charge of this Exhibit, and he is amply able to care for your needs.

THE DOHO CHEMICAL CORPORATION—Booth 21

The Auralgan Exhibit consists of a model of the human auricle four feet high together with a series of twenty-four three dimensional ear drums, modeled under the supvervision of outstanding otologists. Each of these drums depicts a different pathologic condition based upon actual case observation, and prepared in so far as possible, with strict scientific accuracy so as to be highly instructive and interesting to all physicians.

As the observed looks into the large ear through a proportionately sized speculum, the ear drums appear successively within the canal so as to similate actual conditions seen in life. The successive changes of the ear drums are affected by automatic mechanism, and accompanied by a brief description of the condition.

This is the first time that such a complete modeling of ear drums has ever been executed in this scale.

ELI LILLY AND COMPANY—Booth 6

Eli Lilly and Company produced the first commercial preparation of Insulin, contributed to development of liver therapy, and has been responsible for many other therapeutic advancements. Products of importance in routine practice will be displayed.

H. G. FISCHER & COMPANY—Booth 23

H. G. Fischer & Company will display 1940 models of x-ray and short wave apparatus which are so distinctive that every physician should consider inspection a convention obligation. The complete H. G. Fischer & Company line includes shockproof x-ray apparatus, short wave units, combination cabinets, galvanic and wave generators, ultra violet and infra-red lamps and many other units, accessories and supplies.

Physicians attending the convention are invited to ask for demonstrations of apparatus in which they are interested and to consult with FISCHER representative regarding technics made available by FISCHER APPARATUS.

C. B. FLEET COMPANY—Booth 43

PHOSPHO-SODA (FLEET), a saline laxative, has been presented to the Medical Profession for over fifty years. This eliminant is suggested when a rapid non-griping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

GENERAL ELECTRIC X-RAY CORPORATION—Booth 55

Each year the General Electric X-Ray Corporation endeavors to develop for the profession, new and better x-ray and electromedical apparatus.

A visit to the G-E exhibit will prove most helpful to you, whether you are planning for a new installation or the modernization of your present electromedical facilities.

GERBER PRODUCTS COMPANY—Booth 35

Ten new foods which have just been added to the Gerber Baby Foods, will be on display in the Gerber Booth.

Copies of both the professional literature and the booklets for mothers are there for your examination and will be sent to you upon request.

HAMILTON-SCHMIDT SURGICAL COMPANY—Booth 28

The Hamilton-Schmidt Surgical Company of St. Louis has an exhibit at this meeting of the Illinois State Medical Society to exhibit and demonstrate Burdick Physio-Therapy apparatus. They expect to show an interesting collection of genuine Stille stainless steel Swedish instruments. The new improved Safti-Flask of the Cutter Laboratory Dextrose solutions. You are invited to visit this exhibit.

THE G. F. HARVEY COMPANY—Booth 17

The G. F. Harvey Company, one of the oldest manufacturing concerns in the country, recently assumed the distribution of the Chappel organogenates manufactured by the Chappel Laboratories of Rockford, Illinois. These products include the well known gonadotropic hormone, Prephysin, as well as the widely used liver preparations. These items are splendid supplements to the complete line of pharmaceuticals, including all types of ampule medications, manufactured by the Harvey Company. Physcians are also invited to check the product—Harvoglobin, the liver tonic in which the liver cannot be tasted.

Kindly have a Harvey representative explain to you the background of these noteworthy products.

H. J. HEINZ COMPANY—Booth 39

Physicians interested in prescribing for the feeding—especially of infants, older children or adults requiring soft diets, will be interested in the new Heinz exhibit where Strained and Junior Foods are attractively displayed. Mr. J. P. Dermody is in attendance and will be happy to supply information on these foods.

The eighth edition of the popular Heinz Nutritional Charts, containing greatly expanded charts and new data on vitamin content of foods, is ready and will be mailed on request.

HORLICK'S MALTED MILK CORP.—Booth 11

Nourishing, digestible, appetizing—these are the three outstanding qualities for which HORLICK'S is famous, whether in powder or tablet form. Visit the exhibit booth. You will be interested in the many uses from infant feeding to old age—note especially the convenience of the Tablets in ulcer diets.

JONES METABOLISM EQUIPMENT CO.—Booth 5

The "Jones Metabolism Equipment Company" will feature as their display, the Jones MOTOR BASAL Metabolism apparatus.

A special feature of this unit is that it contains no water, and requires no calculation in the determination of the basal metabolic.

"THE 'JUNKET' FOLKS"—Booth 52

"The 'JUNKET' FOLKS," Chr. Hansen's Laboratory, Inc., Little Falls, N. Y. will exhibit at this year's annual meeting. Graduate dietitian in attendance at the exhibit. Free servings of rennet-custards made with "Junket" Rennet Powder and "Junket" Rennet Tablets.

Authoritative literature describes the action of rennet enzyme on milk and the place of rennet-custards in the diets of convalescents, post-operative cases, invalids, infants, children, etc. There will be a display of "Junket" Brand Food Products.

LEDERLE LABORATORIES, INC.—Booth 22

Lederle Laboratories, Inc. will display all types of specific Antipneumococcic Sera as well as Sulfapyridine and Sodium Sulfapyridine, the comparatively new drugs used in the treatment of pneumonia.

We will also present our line of Globulin Modified Antitoxins and pharmaceutical specialties with particular reference to the high potency of Vitamin B Complex and the Bellabulgara Tablets which are receiving such wide spread acceptance in the treatment of Parkinsonism. All physicians are extended a cordial invitation to visit the Lederle booth.

J. B. LIPPINCOTT COMPANY—Booth 8

Among the interesting Lippincott publications on display will be Kugelmass': "Newer Nutrition in Pediatric Practice" and Becker and Obermayer's: "Modern Dermatology and Syphilology." Of similar importance is "Functional Disorders of the Foot" by Dickson and Diveley which has gone into a second printing within five months of publication. Other interesting works include Thorek's: "Modern Surgical Technic," Rigler's: "Outline of Roentgen Diagnosis," Barhorka's: "Treatment by Diet" and many others.

A. E. MALLARD—Booth "B"

A. E. Mallard, Manufacturing chemist of Detroit, Michigan, will have a display of modern pharmaceutical products which are in keeping with the present trend of medical therapy. These products are manufactured under strict laboratory control. They are guaranteed to be true to label and of reliable potency, and are the result of knowledge gained in 29 years of experience in pharmaceutical research and manufacturing.

Dan L. Hovis and Charles B. Stoltz, representative, will be on hand to welcome you.

M & R DIETETIC LABORATORIES, INC.—Booth 36

M & R Dietetic Laboratories, Inc., Columbus, Ohio, will display Similac and powdered SofKurd.

Representatives will be glad to discuss the merits and suggested application of these products.

MEAD JOHNSON & COMPANY—Booth 42

Mead Johnson & Company will exhibit several new products in addition to Dextri-Maltose, Pablum and Oleum Percomorphum.

They will also have on display various examples of their slogan "SERVAMUS FIDEM"—We Are Keeping the Faith.

MEDICAL ARTS SUPPLY COMPANY LEPEL HIGH FREQUENCY LABORATORIES, INC.,—Booth 30

The merchandise we expect to display will consist of one set of physician's examining furniture; three pieces of Lepel High Frequency apparatus; an infra red lamp; an ultra violet lamp; assorted surgical instruments and specialties.

THE MEDICAL PROTECTIVE COMPANY—Booth 27

The Medical Protective Company's representative, thoroughly trained in Professional Liability underwriting, invites you to visit our exhibit booth. He is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship.

He will be glad to explain how his Company meets the exacting requirements of adequate liability protection, which are peculiar to the Professional Liability field.

MELLIN'S FOOD COMPANY—Booth 40

Members of the Illinois State Medical Society are cordially invited to call at our booth for an exchange of ideas and opinions relative to the feeding of infants and in regard to the preparation of nourishment for adults requiring a restricted diet, particularly in view of the recognized importance of selecting food material best adapted to the individual requirements.

THE MENNEN COMPANY—Booth 16

The Mennen Company will exhibit their two baby products —Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90% of the hospitals that are important in maternity work.

Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; also, for the lucky number prize drawing to be held at the close of the convention, for DeLuxe Fitted Leather Toilet Kits.

THE C. V. MOSBY COMPANY—Booth 37

Doctors attending the Illinois State Medical Society are cordially invited to visit the Mosby Booth—there to inspect the new publications which will be on display.

Outstanding new volumes on surgery, allergy, dermatology, operative orthopaedics, nervous and mental diseases, heart diseases, x-ray, gynecology and obstetrics, materia medica, and practice of medicine will be shown. Browse through this new material at the Mosby Booth.

V. MUELLER & COMPANY—Booth 7

The V. Mueller & Company exhibit will, as usual, cover the highlights of the various fields of surgery. It will include the very latest developments in surgical instruments, diagnostic equipment and short wave therapy.

A visit to Mueller's booth is always interesting and educational.

PARKE, DAVIS & COMPANY—Booth 2

Featured in the Parke, Davis exhibit will be the sex hormones, Theelin and Theelol; antisyphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride preparations.

PET MILK SALES CORPORATION—Booths 48 and 49

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company. This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will he given to each physician who visits the Pet Milk hooths.

PETROLAGAR LABORATORIES, INC.—Booth 4

This year the Petrolagar Lahoratories, Inc., will offer, in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts.

Ask the Petrolagar representatives to show you the new HABIT TIME hooklet. It is a welcome aid for teaching howel regularity to your patients.

PHILIP MORRIS & COMPANY, LTD, INC.—Booth 15

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes.

Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

W. B. SAUNDERS COMPANY—Booth 1

This publishing house will exhibit a great numher of new books and new editions in addition to their many excellent works.

Among the more important new books and new editions that will be of particular interest to those attending the convention are Walters & Snell's "Diseases of the Gallbladder," the New (1940) Mayo Clinic Volume, Christopher's "Minor Surgery," Penn Riddle's "Injection Treatments," Buckstein's "Clinical Roentgenology of the Alimentary Tract," Levines "Clinical Heart Disease," Ewing's "Neoplastic Diseases," Wilder's "Clinical Diabetes Mellitus and Hyperinsulinism," Hauser's "Diseases of the Foot," McLester's "Diet and Nutrition," and many standard works such as Bickham's "Operative Surgery," Warbasse-Smyth's "Surgical Treatment," the Medical and Surgical Clinics of North America, and many others.

SCHERING CORPORATION—Booth 62

Schering Corporation's representatives will be pleased to discuss latest developments in hormone therapy.

New products on display will be Cortate (desoxycorticosterone acetate), Anteron (gonadotropic hormone from mares' serum), Pranturon (gonadotropic hormone from pregnancy urine), Pranone (orally effective progestin), as well as the other well-known Schering preparations—Progynon-B, Progynon-DH, Proluton, Oreton and Neo-Iopax.

OTTO SCHWEINBERGER & COMPANY—Booth 57

A free gift will he presented to each and every doctor visiting the Otto Schweinberger & Company Booth in celebration of their 15th anniversary.

They will feature the new Dual Wave Liehel-Flarsheim short wave diathermy, the Dual Spectrum nltra-violet lamp and portable X-Ray, and the new Portable Bovie surgical unit. There will also he on display a complete line of surgical instruments and laboratory equipment including the Spencer microscope.

SHARP & DOHME, INC.—Booth 50

Sharp and Dohme will have their new modern display at their booth this year, featuring Propadrine Hydrochloride Products, "Lyovac" Bee Venom Solution, and other "Lyovac" Biologicals.

There will also be on display a group of new pharmaceutical specialties and biologicals prepared by this house, such as Rabellon, Daldrin, Padrophyll, Elixir Propadrine Hydrochloride, Riona, Depropanex and Rihothiron.

Capable, well-informed representatives will be on hand to welcome physicians and furnish information on Sharp & Dohme products.

S. M. A. CORPORATION—Booth 3

Among the technical exhibits at the meeting of the Illinois State Medical Society this year, is an interesting new display, which represents the selection of infant feeding and vitamin products of the S. M. A. Corporation.

Physicians who visit this exhibit may obtain complete information, as well as samples, of S. M. A. Powder and the special milk preparations—Protein S. M. A. (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE & FRENCH LABORATORIES—Booth 9

Smith, Kline & French Lahoratories, believing that many physicians dislike efforts to make them register, have arranged their booth for self-service.

Up-to-date information about "Benzedrine Inhaler," "Benzedrine Sulfate," "Benzedrine Solution," Pentnucleotide, Feosol Tablets and Elixir, Oxo-ate "B," Eskay's Neuro-Phosphates and "Paredrine Hydrobromide with Boric Acid Ophthalmic" may be ohtained in convenient envelopes from literature dispensers.

If additional information and data is desired, the representative will he glad to answer any questions.

E. R. SQUIBB & SONS—Booth 47

Physicians attending the Illinois State Medical Society convention, are cordially invited to visit the Squibb Exhihit.

The complete line of Squibb Vitamin, Glandular, Arsenical and Biological Products and Specialties, as well as a numher of interesting new items will be featured.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY—Booth 34

The Standard X-Ray Company wishes to extend to the doctors in attendance at the Centennial Meeting a most cordial invitation to visit their exhibit in Booth No. 34. Here you will find on display the very latest type of shockproof equipment that is suitahle for installation in a doctor's office.

Items will be shown that are exclusive to Standard, and will incorporate many features that will not he found on other equipment. These many improvements are the result of over thirty years experience in the manufacture of x-ray equipment.

FREDERICK STEARNS & COMPANY—Booth 38

Doctors are cordially invited to visit our attractive convention booth to view and discuss outstanding contrihutions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will he pleased to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose (flakes and granules) for hulk and lubrication, Insulin-Stearns, Gastric Mucin, Trimax and Sulfanilamide tahlets. A complete line of Vitamin products will also be displayed.

SUTLIFF AND CASE COMPANY, INC.—Booth 13

The physician who is served hy SUTLIFF & CASE finds approximately 1000 medicinal products from which to choose his weapons to fight disease and death.

In addition to ethical pharmaceutical products, modern physicians' supplies and sundries are stocked for the convenience of physician and surgeon.

The SUTLIFF & CASE COMPANY possesses a splendid record of service to, and cooperation with, the medical progress; this record having been built on a solid foundation of 57 years of PROGRESS WITH THE PROFESSION.

WHITE LABORATORIES, INC.—Booth 41

White's Cod Liver Oil Concentrate will be presented for your consideration. At our booth you may obtain complete information concerning the entire field of cod liver oil concentration, with clinical data substantiating the efficiency of White's Liquid, Tablet and Capsule Concentrates.

Qualified representatives and descriptive literature, including reprints and excerpts from medical literature, will further direct attention to the contribution of White Laboratories in the Vitamin A and D field.

JOHN WYETH & BROTHER, INC.—Booth 56

John Wyeth & Brother, Inc., Philadelphia, cordially invites visitors to their booth. Among the specialties to be exhibited are:

AMPHOJEL—Wyeth's Alumina gel for the management of Peptic ulcer and hyperacidity.

ALULOTION—Ammoniated Mercury with Kaolin for the more rapid healing of Impetigo Contagiosa.

BEPRON—Wyeth's Beef Liver with Iron.

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SULFUR FOAM—For the external application of Sulfur.

X-RAY EQUIPMENT COMPANY—Booth 54

The X-Ray Equipment Company, exclusive Illinois distributors of Mattern X-Ray Apparatus, will display the Mattern Model MX combination shock-proof, general diagnostic fluoroscopic and Bucky radiographic tilt table x-ray unit. The MX unit is available in 60, 100 or 200 milliampere capacity. The Mattern Deluxe 20-80 Shockproof Mobile X-Ray Unit will also be displayed. Visit the X-Ray Equipment Company booth and learn how, at surprisingly low cost, you can have the finest X-Ray facilities.

THE ZEMMER COMPANY, INC.—Booth 51

The Zemmer Company extends a cordial invitation to every member of the Illinois State Medical Society to visit their exhibit where they will display a number of their leading pharmaceutical products.

THE HALL OF HEALTH

May 21-25—1940

THE ARMORY

The following exhibits, compiled for lay education, may be seen at the Peoria Armory:

Booth 1. Boy Scouts of America, Creve Coeur Council. "Safety Through Skills."

Booth 2. Illinois Society for Prevention of Blindness, in Cooperation with W.P.A. "Prevention of Blindness."

Booth 3. Lions Club of Peoria. "Safety and Health."

Booth 4. Peoria Maternity Center. "Maternal Welfare Work in Peoria."

Booth 5. Department of Health—Division of Maternal and Infant Hygiene—State of Illinois. University of Illinois College of Medicine—Department of Obstetrics and Gynecology. Maternal Welfare Committee—Illinois State Medical Society. "The Essentials of Prenatal Care."

Booth 6. Sharp & Smith Hospital Division—A. S. Aloe Company. "The Original Dionne Incubator."

Booths 7, 8, 9, 10, 11, 12, 53, 54, 55, 56, 57, 58, 59. Department of Public Health—State of Illinois. "Public Health Service and Preventive Medicine."

Booth 13. Public Service Company of Northern Illinois. "Night Hazards of Driving."

Booth 14. Chicago Heart Association. "Prevention of Heart Disease Is Better Than Cure."

Booth 15. Illinois Dietetic Association. "What Is Your Score"

Booth 16. Peoria Public Health Department. "Quackery."

Booth 17. Illinois State Nurses Association. "Nursing Activities."

Booth 18. Peoria Visiting Nurses Association. "How to Be Happy Tho' Sick."

Booth 19. Peoria Council of Girl Scouts, Inc. "Child Care—A part of the Girl Scout Program."

Booth 20. Illinois Occupational Therapy Association. "Occupational Therapy."

Booth 21. Board of Education, and Peoria District Dental Society. "Dental Department Program."

Booth 22. "American Association of Medical Social Workers. United States Department of Labor. "Occupational Disease."

Booth 23. American Medical Association. *"Hygeia."*

Booth 23. American Medical Association. "Hygeia."

Booth 24. American Medical Association. "Food Fads."

Booth 25. American Medical Association. "Heart Disease."

Booth 26. Peoria County Tuberculosis Association "Tuberculosis Case Finding in a Rural Population."

Booth 27. Peoria Municipal Tuberculosis Sanitarium. "Diagnosis and Treatment of Pulmonary Tuberculosis."

Booth 28. American College of Surgeons. "Fractures."

Booth 29. Cancer Committee, Illinois State Medical Society. Women's Field Army, Illinois Division, American Society for the Control of Cancer. "Prevention and Control of Cancer."

Booth 30. St. Francis Hospital, Peoria. "Pathological Specimens."

Booth 31. Illinois Society for Mental Hygiene. "The Physician As a Mental Hygienist."

Booth 32. American Social Hygiene Association. "Illegal and Unethical Practices in Relation to Syphilis and Gonorrhea."

Booth 33. The American Medical Association. "Dangers of Self-Diagnosis and Self-Medication."

Booth 34. American Medical Association. "Prevention of Eye Injuries."

Booth 35. American Medical Association. "Prevention of Burns."

Booth 36. National Physicians' Committee for the Extension of Medical Service.

Booths 37, 38, 40, 41, 42. Illinois Physicians and Surgeons. "Pictures."

Booth 39. American Red Cross. "Civilian Relief."

Booth 43. Peoria Police Department. "Accident Investigation Bureau." "First Aid Methods and Equipment Used by Police in Investigation of Traffic Accidents."

Booth 44. Works Progress Administration of Illinois. "Health Projects in Illinois."

Booth 45. Chicago Society of Allergy. "What Is This Thing Called Allergy?"

Booth 46. Illinois Congress of Parents and Teachers. "Health Activities."

Booth 47. Metropolitan Life Insurance Company. "New Methods of Pneumonia Control."

Booths 48, 49, 50. Illinois State Planning Commission. "General Health and Educational Exhibit."

Booth 51. Illinois Bell Telephone Company. "First Aid Demonstration."

Booth 52. Chicago Rapid Transit Company—Medical Department. "The Evolution of Resuscitation."

Booths 53, 54, 55, 56, 57, 58, 59. State of Illinois, Department of Public Health. See under Booth 7.

Booth 60. Chicago Medical Society. "Results of Survey."

Booth 61. Educational Committee—Illinois State Medical Society. "Your Medical Society and You."

Booths 62, 63. Woman's Auxiliary to the Illinois State Medical Society. "History of Medicine in Illinois."

Booth 64. Central Council for Nursing Education. "Preparation for Nursing."

Booth 65. Young Women's Christian Association. "Health Is Fun."

ILLINOIS STATE MEDICAL SOCIETY

One-Hundredth Annual Meeting

PEORIA, ILLINOIS

May 21, 22, 23, 1940

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Peoria—May 21, 22, 23, 1940

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FIVE HUNDRED THOUSAND ARE VICTIMS OF DAILY INJURIES

Washington, April 2.—Ten million accidents serious enough to disable their victims one day or longer occur annually in the United States.

Each day 500,000 persons are unable to work, go to school or pursue their usual activities as the result of injuries caused by accidents resulting from multiple sources, the Public Health Service announced today.

The service disclosed that 7 per cent of the deaths among the 70,000 families canvassed were the result of accidental injury. Accidental deaths were exceeded only by mortalities from disease of the heart, cancer and pneumonia.

It was revealed that sixteen of every 1,000 persons are disabled for a week or longer by injuries each year. The average period of disability experienced by the victims of serious accidents is forty-six days. This is compared with the average duration of disability from all causes, which is fifty-seven days. Automobile accidents average fifty-five days of disability.

Many Are Maimed

Maiming injuries occur most frequently in the course of work, the report states, since 70 per cent of the lost fingers and 46 per cent of the loss of other members are attributed to occupational casualties. For impaired members, however, home accidents are of equal importance to industrial mishaps.

The home is far from being the safest place, as it is usually considered. More than 30 per cent of all accidents occur there. The home injuries result mainly from falls, burns and cuts.

Boys and men are more liable to suffer accidental injury than are girls and women until the age group above 65 years is reached. The situation is then reversed.

The greatest single source of accidental injury is the fall, which is credited with 39 per cent of all the serious disabling factors. Falls are even a greater menace at present than automobiles, which are responsible for 20 per cent of the nation's yearly accident toll.

Autos Are Deadly

However, the automobile is responsible for the greatest number of accidental fatalities. Persons injured in an automobile are two and one-half times as likely to die as persons injured by any other means.

The report associates the higher rate of accidents in the homes of the very poor with inadequate housing facilities. Faulty stairways, poor living and heating conditions and rickety furniture are all factors which are responsible for the excessive home injuries among the lower third income group.

The National Health Survey is attempting a solution of the natoin's ever-increasing accident problem by endeavoring to ascertain the source and circumstances under which serious mishaps occur. In this way they hope to suggest preventive measures for each type of accident.—*San Francisco Examiner.*

THE MENACE OF RATS

The unenviable position which rats have come to occupy as a proven factor in the transmission of certain diseases is well known. Their possible involvement in the transmission of certain infections whose method of communicability is at present unknown can only be surmised. The medical profession definitely realizes that rats are a menace to human beings; that there cannot be recognized a single favorable attribute of the rat; and that all that is known of the rat points to its inevitable involvement with human destiny in both an economic way and in spheres of health.

In writing on this subject in a recent issue of *Hygeia,* John M. Gibson estimates the country's rat population at twice its human population. He also estimates that each of these approximately two hundred million disease carrying rodents consumes food costing at least $2.00 a year each. The nation's annual rat food bill, therefore, amounts to considerably more than half a billion dollars.

Hans Zinsser in his book *Rats, Lice and History,* has recently emphasized an interesting fact usually overlooked by historians. He points out that the ravages of certain diseases have been able to change the course of history and determine the fate of empires. Although there is no certain historical knowledge of the rat in Europe before the twelfth century, it is highly probable that some similar form of rodent was responsible for the spread of such devastating epidemics as the bubonic plague. However, we do know that at about this time the black rat came into Europe from Asia and in an incredibly short time swept the country although at the present time it has been replaced by the brown rat. Wherever this rat has gone, it has driven out the black rat and all rodents that compete with it. Again there is nothing that can be said in its favor. It can live anywhere and eat anything. It burrows for itself when it has to but when it can, it takes over the habitations of other animals such as rabbits and kills them and their young. It climbs and it swims. It is known to carry the following diseases of men and animals: plague, typhus, trichinella spiralis, rat-bite fever, infectious jaundice, possibly trench fever, probably foot and mouth diseases and a form of equine "influenza." Its connection with other diseases as a vector is quite possible although unproven.—Bull. Sangamon Co. M. S.

PULSE RATE AT DIFFERENT AGES

Birth	130-150	2 to 4 years	90-110
1st month	120-140	6 to 10 years	90-100
1 to 6 months, About	130	10 to 14 years	80- 90
6 to 8 months, About	120	Adult Age, Average	72
1 to 2 years	110-120	Old Age, Average	67

Picturesque Peoria



Aerial View of Peoria





Views about Peoria

Picturesque Peoria





Scenes in Peoria



MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
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Edited by the Committee on Medical Economics
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W. M. Hartman, M. D.

In the hundredth anniversary number of the founding of the Illinois State Medical Society, this and every other department should have some outstanding article. Unfortunately, the writer of this column has no new problem to even present, let alone solve at this time. He finds it increasingly difficult to keep abreast of the developments each month in the various problems which have been and still are confronting the medical profession. Some of these problems are old and some new. All are difficult of solution due to the varying views of the different people involved therein. So the best we can do at this time is to report the changes on the various economic fronts during the past month, in the hope that we will stimulate a new or increased interest on the part of some of the readers of this column.

The recent report of the American Medical Association on "Medical Care in the United States" should be of great interest to all medical men in the United States. Most interesting and important is the conclusion arrived at, that with the exception of isolated communities, there is no important section of the population of the United States that now fails to receive the medical care it needs and desires. The statement that the physicians of the United States render free medical care of an approximate value of $1,000,000 per day was verified and corroborated. This of course does not include those patients to whom services are rendered with the hope that the attending physician is to be paid, only to have that hope dissipated by their failure to do so.

Modern Medicine, one of the many free periodicals in tabloid form, which now come to the desk of the medical profession of the United States, has recently conducted its own referendum on Federalized Medicine. While admittedly incomplete it was general enough to arrive at some conclusions which are in accord with those of the American Medical Association. 85% of the 20,215 ballots received, show that they are opposed to any radical change in the manner of conducting the practice of medicine in the United States, even to the point of refusal to participation in any system of federalization of medical service. This is a higher percentage of opposition than that received from a similar questionnaire sent out two years age. This shows that there is a growing opposition to so-called "Socialization of medicine." Of especial interest is the approval of the Platform of the American Medical Association by between 85 and 88% of the replying physicians. This is most encouraging for there has been altogether too much talk that the American Medical Association does not speak for the profession at large and this report from a disinterested party will do much to refute such statements. Many newspapers and congressmen have commented favorably on the facts brought out by this survey, some going so far as to state that since this one verifies the report of the A.M.A., socialized medicine is probably put very much on the defensive. It is too much to hope as some of the commentators do that this will be a death blow to the entire question of the socialization of medicine.

A most excellent review of "A New Federal Health Program" in the April 5, 1940 issue of the *United States News* will be printed in this column. This is done with the approval of the News Editor, F. J. Hall. It gives a good resume of the most recent hope of the reformers. It should be read by every member of the Illinois State Medical Society. They should also read the recently presented plan of Senator Taft of Ohio printed in full on page 1676 of the *Journal of The American Medical Association* of April 27, 1940, with an editorial comment on page 1670. It is only by following the new developments in this field that we as physicians can re-

Reprint from The United States News, an independent weekly magazine on national affairs, published at Washington, Apr. 17, 1940.

main able to answer the questions asked us by our patients and other members of the laity in regard to "State Medicine."

At the coming meeting of the House of Delegates at the annual meeting of the Illinois State Medical Society in Peoria May 21-23, there will be a report of the special committee appointed to investigate the question of Voluntary Health Insurance in Illinois. This question was referred to the Council by the House of Delegates in 1939, who in turn referred it to the Medical Economics Committee. A special Committee under the Chairmanship of Dr. W. M. Hartman of Macomb has investigated this subject most thoroughly at a great expense of time on their part. They, through the Medical Economics Committee will report to the House of Delegates with definite recommendations in regard to whether such a plan should be started in Illinois at this time. Of course, the decision will be arrived at by the House of Delegates. It should be incumbent on every member of the House to learn as much as possible in regard to what is being done in other parts of the United States as well as to determine what the needs are in his particular community. Also the desire of the rank and file of the medical profession in his community should be determined and he should come to the annual meeting ready and willing to do his part in arriving at the proper decision.

Those interested in what is happening to the medical profession in England and France as a result of their participation in the current European War should read "Medicine Behind the Lines," by Leicester Cotton and C. M. Chambers in the April issue of *Medical Economics*. Some of the difficulties encountered can be blamed onto the war alone, but apparently some of them are the result of the last thirty years experiment with "State Medicine." Regardless of the cause, the results are certainly demoralizing to the medical profession and any lesson that we can learn by remote control should be profited by. Read it if you have time and then hope that we in the United States will not be embroiled in the age old struggle of European nations for power and more land. We have all we can do here to solve our national problems.

E. S. Hamilton, M.D.,
Chairman.

DEAFNESS

Crowe and Bayloy* present evidence that progressive deafness of middle ear origin begins during childhood and may be prevented if remedial measures are taken.

Chronic partial occlusion of the eustachian tubes by nodules of lymphoid tissue causes retraction of the tympanic membrane, impaired hearing for high tones, and sometimes a total loss of hearing by bone conduction. (These findings indicate that it is necessary to reconsider the diagnostic criteria for differentiating middle and inner ear types of deafness.)

The authors describe the procedure for handling children who present evidences of obstruction of the eustachian tubes. A careful history is taken to uncover the evidences of tubal obstruction. Insidious, slowly progressing deafness, recurring attacks of otitis media, and chronic otorrhea are important facts to be sought in the history.

A careful physical examination, including a nasopharyngoscopic inspection and a tuberculin test are made. Everything possible is done to improve resistance to colds. Healthful habits are instituted. The tonsils, adenoids, and hypertrophied lymphoid tissues on the pharyngeal wall and at the base of tongue are surgically removed. Intensive follow-up treatment with radium and high voltage X-rays is then carried on to prevent regrowth of the lymphatic tissue in the nasopharynx. This phase of the medical supervision is important and continued over a long period of time.

Citing case material covering about 10 years of study, the authors indicate that the hearing of children may be safeguarded, and that children having severe degrees of hearing loss from tubal obstruction may even be cured. After the age of fifteen years the results are far less satisfactory.

If the school health service is to contribute actually to the prevention of deafness, we must not only discover the hard of hearing child and be alert to identify those children who present conditions which are likely to result in deafness, but we must also assume the important responsibility of continued education and follow-up. Too frequently parents and children will neglect the medical superivision which is necessary over a long period of time. The deaf child, the child susceptible to ear and upper respiratory infections, the cardiac child, the diabetic child, and others often require continued and frequent guidance if we are to prevent deviations from the path of health.

*The Prevention of Deafness, S. J. Crowe, M. D., and John W. Bayloy, M. D., J. A. M. A., Feb. 18, 1939.

THE PUBLIC HEALTH SERVICE LEAVES THE TREASURY DEPARTMENT

After nearly 141 years, only 9 years less than the full life of the nation itself as an independent republic under the Constitution, the United States Public Health Service leaves the administrative jurisdiction of the Treasury Department and passes into the Federal Security Agency.

DILANTIN (SODIUM DIPHENYLHYDANTOINATE) IN TREATMENT OF EPILEPSY

J. A. Morgan, M. D.
Elgin State Hospital
ELGIN, ILLINOIS

Extensive experimental and clinical investigations have been carried on by various groups interested in the treatment of epilepsy. A variety of methods have been evolved such as the medical treatments with bromides and barbiturates; the ketogenic diet, restriction of fluids; the surgical excision of scars or irritable cortical foci; the use of snake venom, rabies vaccine and diacetone alcohol. Notwithstanding the beneficial results obtained from several of the above mentioned methods, particularly the bromides and barbiturates, a great number of patients are not relieved of their attacks, or are helped only temporarily by their continued use. This has led to a further search by investigators for a more potent and less sedative compound.

At the annual meeting of the American Medical Association for 1938, Doctors Huston Merritt and Tracy J. Putnam reported the use of a new drug which according to laboratory tests, had great potentialities in the treatment of epilepsy. The drug is somewhat analagous in structure to the barbiturates. It is an odorless white powder with a bitter taste and is soluble in water.

They reported on 200 patients who were placed on this drug for a period ranging from three weeks to eleven months. Their conclusions showed that 58 per cent of 118 patients with frequent grand mal attacks secured complete relief. In 27 per cent the frequency of attacks was reduced. In 74 patients with petit mal 35 per cent obtained complete relief and 49 per cent a decreased frequency. No abnormalities in blood counts, urine examination or blood pressure.

The dosage which effectively controls epileptic seizures varies in adults between 0.2 and 0.6 Gm. daily. They used 0.1 Gm. doses three times daily and increased gradually to 0.2 Gm. three times daily if necessary. The optimum dosage is determined by trial. Previous medication is gradually withdrawn as the new medication is instituted so there is an overlapping; otherwise sudden withdrawal may bring unfavorable results.

The following toxic reactions to sodium diphenylhydantainate have been noted: dizziness, slight nausea, tremors, ataxia, blurred vision and transient diplopia. More serious reactions are scarletiniform dermatitis or a purpura, alleviated by a decrease or entire elimination of the drug until symptom-free, after which it can be reduced with a reduction in dosage. Gingival swelling, due to the loss of vitamin C has also been observed.

Contraindications are the use of the drug in aged patients with hypertension, cardiorenal disease or in marked debility.

At the Elgin State Hospital this drug has been used on a small series of patients. Due to a limited supply only eight were selected—those who had the greatest number of grand mal seizures at the most frequent intervals—one to several per day. Blood counts, urine analysis and blood pressures taken before and after treatment revealed no changes. Their reflexes and responses to heat and cold were also tested but nothing unusual was found. All were taking luminal with no relief from their attacks. The drug was gradually instituted as luminal was withdrawn; dosage varied from 0.1 grams (1½ grains) four times daily to 0.2 Gms. (three grains) three times daily for three months.

The following observations were made:

1. None of the cases developed serious toxic reactions. Practically all complained of initial nervousness, which may have been due to withdrawal of luminal that gradually left them.

2. All those who were able to express themselves claimed that they were benefited. Others were commented upon by attendants who reported beneficial changes.

3. The outstanding result was the cessation of convulsions in three cases with the continued use of the drug. The remaining five experienced longer intervals between seizures and the latter were milder in character.

In two of the above three classes, upon withdrawal of the drug and resumption of luminal therapy, no convulsions occurred for four weeks. In the remaining cases the convulsions returned in a very short time.

THE STATE OF MASSACHUSETTS has recently passed legislation which makes it possible to protect its citizens in medical affairs. Hitherto there has been no provision for examining candidates for licenses to practice medicine except by a written test—a method of determining competence considered inadequate by all other states. Now Massachusetts is

requiring that those who take the licensing examination must be graduated from approved medical schools.

A board, which has the authority to formulate standards in medical education, has been organized and will pass on the qualifications of schools of medicine. Massachusetts is to be congratulated upon this step which raises the qualifications of its medical practitioners to the general level prevailing throughout the United States.—Editorial, Jour. of Amer. Med. Assn.

News of State

A SERIES OF FOUR SESSIONS IN OBSTETRICS AND PEDIATRIC FOR MEDICAL PHYSICIANS OF ILLINOIS OUTSIDE CHICAGO

Limited to 18 Physicians for Each of the One-Week Sessions

Beginning July 8, 1940

Each summer for the past three years leading obstetricians and pediatricians of the great Chicago medical schools have joined with the departments of obstetrics and pediatrics of the University of Illinois to participate in giving short intensive courses in obstetrics and pediatrics for the general practitioners of Illinois.

The aim of the courses has been to answer as many of the problems of general practitioners in these two fields as is possible in the short space of one week's time. For this reason formal lectures are not featured but rather small group conferences with qualified instructors. One formal lecture is given at the beginning of each day, and then the remainder of the morning is spent in work with patients in the dispensary. The noon lunch is followed by a round table discussion of some phase of obstetrics or pediatrics. The mid-afternoon period is given over to ward walks in both Research and Educational Hospitals and in Cook County Hospital. The group is divided into two sections for the dispensary work and ward walks so that part of the group works in obstetrics and part in pediatrics at the same time. The final period of the day is given over to special demonstrations, consultation hours in pediatrics and obstetrics and maniken work. Where it is desired, arrangements are made as far as possible for delivery demonstrations, both normal and pathological, in the home and in the Research Hospital.

A departure from neonatal pediatrics is being made this year, and particular attention will be given to medical and surgical pediatrics. Such special phases as behavior, allergy, acute surgical conditions, pneumonia, etc., will be discussed. Such special topics in obstetrics as local anesthesia and analgesia as well as gynecological discussions will be featured also.

The following well-known teachers, and many others, participate in giving the courses:

Dr. J. L. Baer, Prof. of Ob. and Gyn., Rush Medical College.

Dr. Bert J. Beverly, Asst. Prof. of Ped., Rush Medical College.

Dr. W. H. Browne, Asst. Prof. of Ob. and Gyn., U. of Ill.

Dr. E. L. Cornell, Asst. Prof. of Ob. and Gyn., Northwestern U.

Dr. W. C. Danforth, Prof. of Ob. and Gyn., Northwestern U.

Dr. F. H. Falls, Prof. of Ob. and Gyn., U. of Ill.

Dr. C. W. Finnerud, Asst. Prof. of Dermatology, Rush Medical College.

Dr. B. L. Hamilton, Prof. of Ped., U. of Chicago.

Dr. J. H. Hess, Prof. of Ped., U. of Ill.

Dr. Paul Holinger, Assoc. Bronchologist, U of Ill.

Dr. A. J. Kobak, Asst. Prof. of Ob. and Gyn., U. of Ill.

Dr. S. O. Levinson, Samuel Deutsch Serum Center.

Dr. H. A. Lindberg, Chief, Division of Pneumonia Control, State Dept. P. H.

Dr. Edwin Miller, Assoc. Prof. of Surgery, Rush Medical College.

Dr. Albert Montgomery, Chief Surgeon, Children's Memorial Hospital.

Dr. Charles Newberger, Asst. Prof. of Ob. and Gyn., U. of Ill.

Dr. H. G. Poncher, Assoc. Prof. of Ped., U. of Ill.

Dr. F. E. Snear, Prof. of Dermatology, U. of Ill.

Dr. H. J. Shaughnessy, Chief, Division of Lab., State Dept. P. H.

This year the course will be given for only four sessions of one week each. The opening dates are as follows:

July 8, 1940.
July 15, 1940.
July 22, 1940.
July 29, 1940.

The registration fee is $10.00. For further information address Mr. G. R. Moon, Registrar, University of Illinois College of Medicine. Rooms at reasonable rates may be had at the Professional Y.M.C.A., 1804 West Congress Street, Chicago, Illinois.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Peoria County: The Woman's Auxiliary of the Peoria Medical Society had a dinner and business meeting April 2nd, at the University Club. At the opening of the meeting the president, Mrs. O. E. Barbour, presented an ebony and silver gavel to the auxiliary, which was accepted by the vice president, Mrs. H. F. Diller. There were 48 members present. The Advisory Committee which includes Drs. C. G. Farnum, chairman; E. C. Kelly, co-chairman; Margaret B. Meloy, Wm. A. Hinckle and Ray King, were introduced.

Adams County: Dr. James H. Hutton, Pres. Illinois State Medical Society was guest speaker at a meeting of the auxiliary held April 8th in the home of Mrs. W. Stevenson. His topic was, "Some Impor-

tant Facts All Auxiliary Members Must Know." Mrs. W. M. Whitaker, Pres. presided at the meeting.

Sangamon County: The following officers were elected for the year 1940-1941 at a meeting held in the home of Mrs. H. Southwick. Pres., Mrs. M. E. Rolens, Vice-Pres., Mrs. R. S. Campbell, Sec'y, Mrs. A. T. Kedar, Treasurer, Mrs. W. J. Morginson.

Mrs. C. W. STUART,
Chairman, Press & Publicity.

MEDICAL DIVISION, NORTHWESTERN UNIVERSITY ALUMNI ASSOCIATION

The annual alumni-faculty reunion of Northwestern University Medical School is being held May 24 and 25, 1940. On May 24th a golf tournament will be held at the Illinois Country Club in the afternoon, and several class reunion dinners will be held in the evening. On Saturday, May 25th a symposium on the "Gastro-Intestinal Tract," participated in by members of the faculty, will be given in Room 108, Passavant Memorial Hospital. That evening the annual Faculty-Alumni banquet will be held at 6:30 P. M. in the Grand Ballroom of the Drake Hotel.

All Northwestern medical graduates are urged to attend as an interesting and enjoyable two days are anticipated. Dr. Howard B. Carroll, '25, Chairman in Charge.

The Alumni of Northwestern University Medical School are holding a luncheon in the Early American Room of the Hotel Pere Marquette, Peoria, Illinois, on May 22, 1940, at 12:00 noon. All Northwestern men are urged to be present. Dr. George Parker, '02, Chairman in Charge.

Walter H. Nadler, '13,
President, Medical Division,
Northwestern University
Alumni Association.

PEDIATRICIAN'S LUNCHEON

A joint luncheon meeting of the Section on Pediatrics of the Illinois State Medical Society and American Academy of Pediatrics of Illinois, will be held Wednesday noon, May 22, at the Creve Coeur Club and it is scheduled for 12:00 o'clock. All physicians interested in Pediatrics are invited to attend and should notify Dr. John R. Vonachen, 901 Hamilton Boulevard, Peoria.

ATTENTION
GRADUATES OF THE COLLEGE OF MEDICINE, UNIVERSITY OF ILLINOIS

The Alumni Association of the College of Medicine, University of Illinois, most cordially invites all graduates of the College of Medicine and the members of its faculty, to attend the Annual Alumni Luncheon, which will be held at Peoria during the meeting of the Illinois State Medical Society, on Wednesday, May 22, 1940, at twelve o'clock at the Pere Marquette Hotel. Matt A. Reasoner, '99, Colonel United States Army, will preside.

The Committee in charge of local arrangements, Dr. William A. Malcolm, Chairman, Dr. Everett C. Kelly, and Dr. Kenneth N. Petri, assure us this will be a good meeting. Plan to take luncheon with your old college friends.

M. H. Streicher, '24, Secretary.

Marriages

Clarence Bernstein, Chicago, to Miss Babette Friedmann of Philadelphia, March 12.

Irving Ginsburg, Chicago, to Miss Selma Mervis of Lima, Ohio, February 18.

Zigmore Harris, Chicago, to Miss Sylvia Estelle Hirsh, April 14.

Keith J. Long, Fairview, Ill., to Miss Dorothy Wood of Peoria, February 7.

Francis X. Meier, Milan, Ill., to Miss Melva Rounsaville of Moline in January.

Personals

Dr. Carlo Scuderi was invited to give a paper on "Fractures" before the Vermilion County Medical Society, April 2.

Dr. Stanley Gibson gave a paper on "Rheumatic Heart Disease in Children" before the doctors of Beardstown on April 3.

Dr. James H. Hutton addressed a joint meeting of the Madison County Medical Society and the Madison County Bar Association at Alton on April 4.

Dr. Max Cutler was the guest speaker at the dedication of the new department of radiation therapy at St. John's Hospital, Cleveland, Ohio, on March 27. He also spoke in Atlanta, Georgia, on March 29 on the Control of Cancer.

Dr. M. Herbert Barker spoke before the La-Porte County Medical Society March 21. Subject, "The Present Status of the Medical and Surgical Management of Hypertension."

Dr. Joseph L. Baer addressed the Knox County Medical Society, Galesburg, April 4. Subject, "Prolonged Labor."

Dr. Arthur H. Conley addressed the Will-Grundy County Medical Society at Joliet, April 19.

Dr. Max Thorek addressed the Elkhart County Medical Association of Elkhart, Indiana, at its annual meeting on April 4 on "Electrosurgical Obliteration of the Gallbladder."

Dr. Clifford J. Barborka gave a paper before

the Arkansas State Medical Meeting at Fort Smith, April 15, subject "Gall Bladder Disease."

Dr. I. Pat Bronstein gave a paper on "Endocrine Disturbances in Infancy and Childhood" before the Will-Grundy County Medical Society on April 5.

Dr. Eric Oldberg addressed the Dane County Medical Society at Madison, Wisconsin, April 9 on "Some Practical Facts About the Spinal Cord."

Dr. Henry E. Irish was to give a paper on "Useful Drugs in Infancy" before the Lawrence County Medical Society on April 10.

Dr. Lindon Seed spoke on "Tumors of the Neck" before the McDonough County Medical Society, April 10.

Drs. Frederick H. Falls and Clifford Grulee presented a program on Obstetrics and Pediatrics at Monmouth for the Warren County Medical Society, April 11.

Dr. John R. Ballinger was invited to give "A Brief on Medico-Legal Law" before the Will-Grundy County Medical Society on April 12.

Drs. W. J. Dieckman and Julius H. Hess presented a program before the Jersey Green County Medical Society on April 12, subjects "Vanishing Toxemias of Pregnancy" and "The Premature Infant."

Dr. Heyworth N. Sanford gave an address on "Studies in Blood Coagulation Disturbances" before the Missouri State Medical Association at Joplin, Mo., on April 29.

Dr. Joseph L. Baer spoke on Endocrines in Obstetrics and Gynecology before the Lancaster County Medical Society at Lincoln, Nebraska, April 16.

Dr. Italo F. Volini gave a paper before the Kankakee County Medical Society on April 9.

Dr. James H. Hutton addressed the Adams County Medical Society and the Bureau County Medical Society on April 8 and 9, subject "Recent Advances in Endocrinology."

Dr. Meyer Brown, Chicago, addressed the Madison County Medical Society, Granite City, March 1, on "Headache, Including Migraine."

Dr. Mary R. McConahy, oldest alumna of the University of Michigan Medical School, Ann Arbor, recently observed her one hundredth birthday at the Presbyterian Home, Evanston. She graduated in 1890.

Dr. Milton C. Winternitz, New Haven, Conn., conducted a clinic and discussed "Problems of Vascular Pathology" before the Peoria City Medical Society, March 5. Dr. Clifford U. Collins addressed the society, March 19, on medico-legal problems.

Dr. Burrill B. Crohn, New York, lectured at the University of Illinois College of Medicine, March 2, under the auspices of Alpha Omega Alpha, on "Peptic Ulcer."

Dr. Francis M. Rackemann, Boston, addressed the North Side Branch of the Chicago Medical Society, April 4, on "What the Practitioner Should Know About Allergy."

Dr. Temple S. Fay, professor of neurology and neurosurgery, Temple University School of Medicine, Philadelphia, discussed "Temperature Factors as Related to Cancer" at the University of Illinois College of Medicine, April 27. The lecture, sponsored by Alpha Omega Alpha, is open to students, faculty members and all interested persons.

The Christian County Medical Society was addressed at Taylorville on March 27, by Dr. Otto Schwarz on "Obstetric Hemorrhages," and by Dr. W. M. Whitaker, Quincy, on "Allergic Child."

The Chicago Surgical Society announces the results of the competition for its Second Annual Prize of $250.00. The Committee was unable to distinguish in excellency between two of the papers submitted; consequently the prize was divided equally between Dr. Leon J. Aries for his paper entitled "Experimental Analysis of the Growth Pattern and Rates of Appositional and Longitudinal Growth in the Rat Femur," and Dr. Carl Ireneus, Jr., for his paper entitled "Experimental Bile Pancreatitis with Special Reference to Regeneration (Recovery) and to the Toxicity of the Hemorrhagic Exudate." These papers will be presented before the Chicago Surgical Society at its meeting on May 10, 1940.

Dr. Robert S. Berghoff, Clinical Professor of Medicine at Loyola University School of Medicine, and Chairman of the Scientific Service Committee of the Illinois State Medical Society, has been elected to membership in the Alpha Omega Alpha Honorary Medical Society in the chapter of his alma mater, St. Louis University. He was inducted at St. Louis on April 24 and on that occasion was the principal speaker. His subject was "Senile Ecstasy."

News Notes

—The Chicago Medical Society devoted its meeting on April 17 to a discussion of "Infant Mortality in Chicago 1935-1939" by Dr. William I. Fishbein. Drs. Luella E. Nadelhoffer and Julius Hess discussed "Maternal Mortality in Chicago 1935-1939." A clinical meeting was held at the Chicago Lying-In Hospital in the morning and afternoon.

—"The Romance of a Century of Medicine," will be dramatized by the Peoria Broadcasting Company and Radio Station WMBD in a special program dedicated to the Illinois State Medical Society and its founders the evening of May 22, following the President's Dinner.

Doctors and their wives are invited to attend the half-hour presentation, which opens at 9:30 p. m., from the stage of the Shrine Mosque.

—J. Christian Bay, librarian of the John Crerar Library, gave an address in the assembly room of the Institute of Medicine of Chicago, April 16, under the auspices of the Society of Medical History of Chicago. He discussed "Men, Method, and Memory in Scientific Progress." Dr. M. Ruiz Castañeda, department of medical research, General Hospital, Mexico City, gave an illustrated lecture at a joint meeting of the Institute of Medicine of Chicago, the Chicago Society of Internal Medicine and the Chicago Pathological Society, April 29, at the Palmer House, on "Recent Advances in Research on Typhus in Mexico." The second Ernest Edward Irons Lecture was delivered at Billings Hospital, March 26, by Dr. David P. Barr, Busch professor of medicine, Washington University School of Medicine, St. Louis, on "The Nature of Obesity." Dr. Edward W. Archibald, emeritus professor of surgery, McGill University Faculty of Medicine, Montreal, Que., delivered the sixteenth Lewis Lin McArthur Lecture of the Frank Billings Foundation before the Institute of Medicine of Chicago, April 26. His lecture was entitled "Discussion of the Theories Concerning the Causation of Acute Pancreatitis."

—The Ravenswood Hospital held its third of a century anniversary at the North Shore Country Club, May 8.

Dr. George N. Bussey and Dr. George de Tarnowsky, two physicians who were active in the organization of the Hospital and who have been active during the thirty-three years of its existence, were guests of honor.

The program included presentation of gifts to the honored guests by Dr. Richard F. Greening, President of the Medical Staff, and Dr. Darwin H. Pond, the Hospital's first intern.

Mrs. Wm. Lill, President of the Woman's Auxiliary, and James R. Cardwell, Chairman of the Board of Trustees, delivered congratulatory messages.

Miss Kathryn Witwer, prima donna soprano of the Mutual Broadcasting System, rendered several solos.

—To fill the position of superintendent of the division for handicapped children in the state department of public welfare, applications will be received until midnight, April 7. Qualified persons must be graduates of approved medical schools; must have completed internship in an approved hospital; must have had two years training and experience in pediatrics of a quality comparable to that accepted by the American Board of Pediatrics, including one year as resident in pediatrics in a hospital approved for such residency; must have administrative ability or experience such as that evidenced by several years of successful employment in public health or welfare administration, administration of medical services for children, or other administrative work of a related character. Address the Executive Secretary, Illinois Commission for Physical Handicapped Children, 1800 West Fillmore Street, Chicago.

—The Illinois State Medical Society sponsored postgraduate conference in the assembly hall of the Dixon State Hospital, Dixon, April 18. The following program was arranged:

Dr. Julius H. Hess, Chicago, Bronchiectasis in Childhood.

Dr. Charles M. McKenna, Chicago, Some Problems in the Diagnosis of Renal Tumors.

Dr. Francis E. Senear, Chicago, Diseases of the Skin.

Dr. Delmas K. Kitchen, Detroit, Diagnosis and Therapy of Sexual Immaturity.

Dr. Warren G. Murray, Dixon, Interesting Cases Shown by Staff Members of the Dixon State Hospital.

Dr. Carl V. Moore, St. Louis, Differential Diagnosis and Treatment of the Hemorrhagic States.

Dr. Charles B. Puestow, Chicago, Influence of Drugs on Intestinal Motility.

Dr. Harold D. Palmer, Rockford, Clinical Pathology of the Kidney.

Dr. Charles F. Sawyer, Chicago, Biliary Tract Disease.

Dr. Robert S. Berghoff, Chicago, Thyroid Heart Disease and The Diseased Gallbladder and Its Relation to Heart Disease.

—During the convention of the American Medical Association in New York City, June 10 to 14, 1940, the Jefferson Medical College Alumni Association will hold its Reunion Banquet on Wednesday, June 12, at 7 P. M., at the Murray Hill Hotel on Park Avenue at 40th Street. Tickets are $2.50 each.

Request for reservations may be addressed to me at that hotel.

But if you neglect to make reservations—come anyway.

THOMAS F. DUHIGG,
Chairman Dinner Committee.

—The annual meeting of the Iowa and Illinois Central District Medical Association will be held Thursday, May 16, at the Outing Club in Davenport, Iowa.

The program will begin at 3 P. M. with Dr. August A. Werner, assistant professor of Internal Medicine, St. Louis University School of Medicine, who will deliver an address, "The Anterior Pituitary Gonad Relationship in the Female." At 4 P. M. Dr. John J. Shea, head of the John J. Shea Clinic of Memphis, Tesnessee, will deliver an address, "The Management of Tonsil and Adenoid Surgery." At 5 P. M. Dr. Italo F. Volini, professor and head of the department at Loyola University School of Medicine, Chicago, Illinois, will deliver an address on "A Survey of Heart Disease."

Dinner will be served at 6:00 P. M. After this there will be the election of officers.

At 7:45 P. M. Dr. C. G. Farnam of Peoria, Illinois, will recite some original medical poems, "Nonsense in Rhyme."

At 8:15 P. M. Dr. Walter C. Alveraz, professor of Medicine University of Minnesota (Mayo Foundation) and Senior Consultant in the Division of Medicine in the Mayo Clinic, Rochester, Minnesota, will deliver an address, "How Medicine Began."

All physicians in eastern Iowa and western Illinois are cordially invited to attend this program.

Deaths

Joseph Gerhard Beykirch, Jr., East St. Louis, Ill.; St. Louis University School of Medicine, 1914; a Fellow A. M. A.; past president of St. Clair County Medical Society; on the staffs of St. Mary's Hospital; aged 51; died, February 5, in the Good Samaritan Hospital, West Palm Beach, Fla., of myocarditis, nephrosclerosis and hypertension.

David L. Bley, Staunton, Ill.; Jefferson Medical College of Philadelphia, 1875; a member of the Illinois State Medical Society; aged 86; died February 16.

Mareva Dickerman Brown, De Kalb, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1898; member of the Illinois State Medical Society; aged 77; was found dead, February 8.

Emil Albert Buchholz, Mount Carmel, Ill.; Kentucky School of Medicine, Louisville, 1899; aged 76; died, Dec. 6, 1939.

Winfred E. Conklin, Paris, Ill.; Hahnemann Medical College and Hospital, Chicago, 1902; aged 63; died February 15, in St. Anthony's Hospital, Terre Haute, Ind., of mesenteric thrombosis.

Bernard Fantus, a Fellow A. M. A.; distinguished as a leader in the field of therapy, died of myocarditis at the age of 65 at his home in Chicago, April 14.

He was born in Budapest, Hungary, Sept. 1, 1874. After preliminary study in Vienna he came to the United States, where he attended the University of Illinois School of Medicine and received his M.D. degree in 1899. He did graduate study in pharmacology at Strasbourg in 1906, at Berlin in 1909 and at the University of Michigan in 1917, from which he received the degree of master of science. He served as associate attending physician at the Cook County Hospital 1901-1902 and was in charge of the medical dispensary at the University of Illinois 1902-1913. From 1903 to 1924 he was professor of pharmacology and therapeutics at the University of Illinois School of Medicine and then taught as associate professor of medicine at Rush Medical College from 1924 to 1932. Since 1932 he had been professor of pharmacology, materia medica and therapeutics at the University of Illinois. He served also as professor of physiology at the College of Pharmacy of the University of Illinois from 1913 to 1917. Since 1930 he had been attending physician to the University Hospital and since 1934 director of therapeutics at the Cook County Hospital.

Dr. Fantus contributed widely to scientific medical literature and conducted numerous original investigations in the field of therapy. His research covered particularly such topics as the use of candy medication, the technic of medication and, more recently, the preservation of blood. In 1933 he was awarded the first honorary degree given by the American Therapeutic Society for his work in making medication more

palatable for children. The "blood bank" at the Cook County Hospital was established by him on March 15, 1937, and his plan of organization has been widely followed. Since 1918 he had been editor of the "Year Book of General Therapeutics." His contributions to medical literature include also "Prescription Writing," "Candy Medication," "Useful Cathartics" and "Technic of Medication" and many periodical articles.

For many years he contributed his time and his efforts toward the establishment of an area in Chicago surrounding the Cook County Hospital and the nearby medical schools and hospitals as a medical park. More recently he was chairman of the Committee on Spas of the American Medical Association. He was an indefatigable worker, a genial personality and an inspirational contributor in the field of therapeutics.

Paul Eber Norman Greeley, Waterman, Ill.; University of Michigan Homeopathic Medical School, Ann Arbor, 1900; Rush Medical College, Chicago, 1901; a Fellow, A.M.A.; past president of the DeKalb County Medical Society; medical director and owner of the East Side Hospital; aged 64; died, February 10, of coronary thrombosis.

Samuel Haley, Joy, Ill.; Northwestern University Medical School, Chicago, 1896; aged 77, died, February 19.

Burt Horace Hardinger, Mattoon, Ill.; Rush Medical College, Chicago, 1916; a Fellow, A.M.A.; served during the World War; aged 47; on the staff of the Memorial Methodist Hospital, where he died, February 4, of diabetes mellitus.

Peter William Holleman, Chicago; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1889; on the staff of the Roseland Community Hospital; aged 79; died, February 8, of coronary occlusion.

Irvin Everett Huston, Galva, Ill.; State University of Iowa College of Medicine, Iowa City; 1888; aged 80; died, February 11, at the Galesburg (Ill.) Cottage Hospital of pneumonia.

James Alexander Houston, Oak Park, Ill.; Jenner Medical College, Chicago, 1904; aged 64; died, February 26, of coronary thrombosis.

Leon C. Ives, Peoria, Ill.; Chicago College of Medicine and Surgery, 1916; a Fellow, A.M.A.; served during the World War; aged 49; died, February 29, in the Proctor Hospital of gastric carcinoma.

Harry W. Keatley, Rock Island, Ill.; Maryland Medical College, Baltimore, 1903; served during the World War; for many years connected with the United States Public Health Service; aged 59; died, February 9, in the Mercy Hospital, Davenport, Iowa, of a gunshot wound of the head.

Rudolf Kronfeld, Chicago; Medizinische Fakultät der Universität Wien, Austria, 1926; member of the Illinois State Medical Society; also a dentist; professor of dental pathology at the Dental School of Loyola University; aged 38; died, February 13.

Charles Leroy Lamont, West Frankfort, Ill.; National University of Arts and Sciences Medical Department, St. Louis, 1912; aged 59; died, Dec. 16, 1939.

Thomas Joseph Ney, Chicago; Chicago Medical School, 1921; aged 45; died, February 5.

Alfred Ellsworth Owens, Princeton, Ill.; Chicago Medical College, 1883; member of the Illinois State Medical Society; on the staff of the Perry Memorial Hospital; aged 82; died January 21, in Moline of chronic myocarditis.

David Harry R. Patton, Chicago; Baltimore Medical College, 1896; a Fellow, A.M.A.; on the staffs of the Illinois Masonic Hospital and the Woodlawn Hospital; aged 72; died, February 28, of myocarditis and coronary sclerosis.

Barlow Lloyd Price, Palestine, Ill.; Chicago College of Medicine and Surgery, 1916; member of the Illinois State Medical Society; aged 50; died, January 10.

Charles Wesley Race, Chicago; Western Reserve University Medical Department, Cleveland, 1897; aged 66; died February 2, in St. Francis Hospital, Evanston, Ill., of arterio sclerosis and cerebral thrombosis.

Nikolaos Salopoulos, Chicago; National University of Athens School of Medicine, Greece, 1890; aged 74; died, February 2, in the Presbyterian Hospital of chronic myocarditis.

Joseph Stephen Terrando, La Salle, Ill; Regia Università degli Studi di Parma. Facoltà di Medicina e Chirurgia, Italy, 1903; a Fellow, A.M.A. aged 67; on the staff of St. Mary's Hospital, where he died, February 20, of coronary thrombosis.

Marvel Thomas, Gillespie, Ill.; Missouri Medical College, St. Louis, 1884; aged 84; died, February 16, of cerebral hemorrhage.

Albert L. Trabue, Springfield, Ill.; Pulte Medical College, Cincinnati, 1881; aged 80; died, February 5, in St. John's Hospital.

Sidney D. Wilgus, Rockford, Ill.; University of Buffalo School of Medicine, 1895; a Fellow, A.M.A.; fellow of the American College of Physicians; member of the American Psychiatric Association and the Central Neuropsychiatric Association; past president of the Chicago Neurological Society; alienist for the department of welfare of Illinois from 1929 to 1933; chairman of the New York State Board of Alienists from 1904 to 1910; on the staff of St. Lawrence State Hospital, Ogdensburg, N. Y., 1895-1902; superintendent of the Elgin (Ill.) State Hospital, 1910-1911, and the Kankakee (Ill.) State Hospital from 1911 to 1913; on the staff of the Rockford General Hospital; founder of the Wilgus Sanitarium (Elmlawn) in 1913; on the staff of the Rockford Children's Home; veteran of the Spanish-American and World wars; aged 68; died, February 23, of coronary occlusion.

Albert Wilberforce Williams, Chicago; Northwestern University Medical School, Chicago, 1894; member of the Illinois State Medical Society; on the staff of the Provident Hospital; aged 78; died, February 26, of coronary thrombosis.



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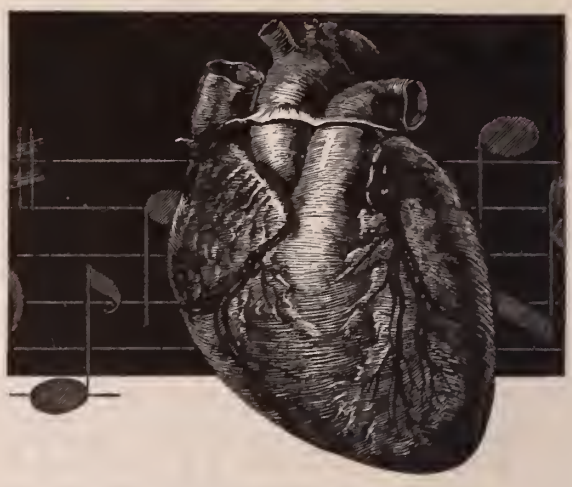
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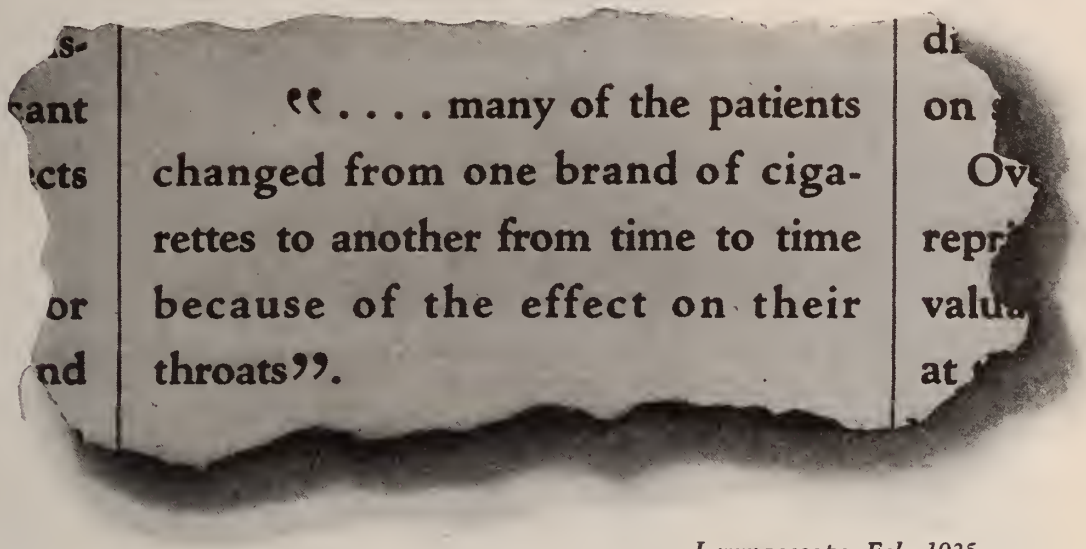
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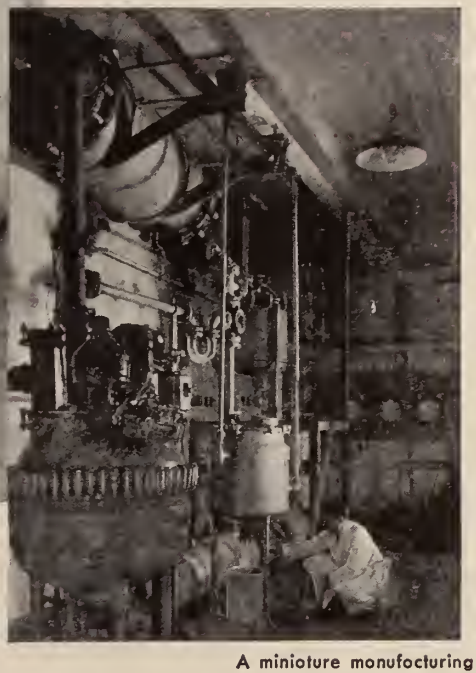
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Book Review

Introduction to Medicine. By Don C. Sutton, M.D. with Introduction by Ada Belle McCleery, R.N. With 144 Text Illustrations and 14 Color Plates. St. Louis. The C. V. Mosby Company. 1940. Price, $3.25.

This book, to a very great extent, represents the background, training and present work of its author.

All the various diseases are described in this work together with a sufficient amount of nursing care. The book is well rounded by its confirmation to the curriculum guide, and is well suited for use by schools of nursing.

Chemotherapy and Serum Therapy of Pneumonia. By Frederick T. Lord, M.D. Elliott S. Robinson, M.D. and Roderick Heffron, M.D. New York. The Commonwealth Fund. 1940. Price, $1.00.

This book is the third of a series of hand books on pneumonia published by the Commonwealth Fund. It includes a discussion on chemotherapy and further data on the use of horse and habbit anti-serum as well as information relating to the combined use of Sulfa-Pyridine and antiserum.

This hand book discusses the indication and contra-indication for various forms of treatment, their relative merits, methods of use, precautions to be observed, and the results obtained.

Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Chord. By Robert Bing, Basel, Switzerland. Translated and Edited by Webb Haymaker. Eleventh Edition. With 125 Illustrations, 27 in Color, and 7 Plates. St. Louis. The C. V. Mosby Company. 1940. Price, $5.00.

This edition presents immense amount of data with the greatest possible clarity. The increase in size of this volume from the original 200 pages to 275 pages is indicative of the increase in our knowledge and understanding of localization during the last three decades.

Symposium of Obstetrics. By Jennings C. Litzenberg, M.D. With 157 Illustrations Including 5 in Colors. St. Louis. The C. V. Mosby Company. 1940. Price, $4.50.

In this work the author has placed due emphasis upon the really important considerations. He minimized the more or less irrevelent: and evaluates the questionable and at the same time maintains the balance between minimum and maximum stress so necessary to develop sound judgment.

Diagnosis and Treatment of Diseases of the Hair. By Lee McCarthy, M.D. With 291 Illustrations Including 7 in Color. St. Louis. The C. V. Mosby Company. 1940. Price, $9.50.

This work is intended to help the physician to a better knowledge of all type of hair diseases. The work is intended primarily for students of dermatology and practitioners, it will also be found useful as a book of reference for trained dermatologists. Special emphasis has been placed on differential diagnosis of the various diseases and their possible relations to general health.

The clinical photographs were, for the most part, taken from the authors private practice.

Cancer in Childhood and a Discussion of Certain Benign Tumors. Edited by Harold W. Dargeon, M.D. Illustrated. St. Louis. The C. V. Mosby Company. 1940. Price, $3.50.

It is the purpose of this volume to emphasize childhood cancer as one of the important children's diseases. The observations presented were made on a comparatively large group of children in a hospital devoted entirely to the study and treatment of tumors.

The papers which comprise this symposium represent the collective efforts and experience of members of the various departments of the Memorial Hospital for Cancer and allied diseases in New York. In this work shows that there has been an increase in the death rate from cancer among individuals below sixteen years of age.

The Management of Obstetric Difficulties. By Paul Titus, M.D. With 368 illustrations and 5 Colored Plates. Second Edition. St. Louis. The C. V. Mosby Company. 1940. Price, $10.00.

Many new things of importance have been included in this edition . . . advances in the relief of sterility, the use of sulfanilamide in puerperal sepsis and pyelitis, the detailed technic of X-ray pelvimetry, technical advances in various operative procedures, in the management of toxemia and of the anemias of pregnancy, improvements in obstetric and analgesia and anesthesia.

Many deletions have been made. Seventy-five new illustrations have been added. The book contains eighty-eight more pages than the first edition, representing considerable enlargement of the text.

Elmer and Rose Physical Diagnosis. Revised by Harry Walker, M.D. with 295 Illustrations. Eighth Edition. St. Louis. The C. V. Mosby Company. 1940. Price, $8.75.

In this revision the author has followed the example of the original authors and describes not only the signs of value, but the more generally known useless ones as well and assigns to each its proper relative value. The author has rearranged the chapters to make them conform more or less to the usual order of the physical examination as ordinarily carried out in medical practice. Many minor as well as a few major changes have been made so as to have the ideas expressed in the subject matter conform to the generally accepted present-day opinions. Comments on the physical findings of several clinical entities have been included for the first time, and many changes have been made in the illustrations.

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[1]LOVE, WM. S., JR.: The Effectiveness of Trichlorethylene in Preventing Attacks of Angina Pectoris, Annals of Int. Med. 10:1187 (February) 1937.

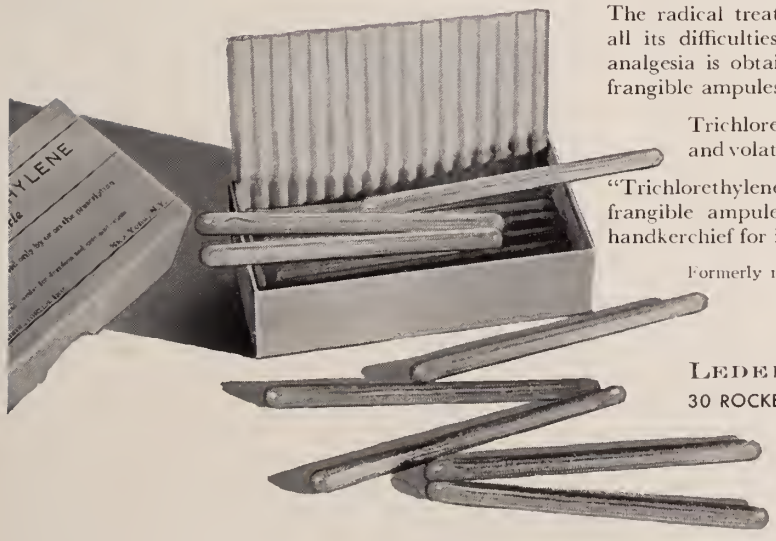
[2]WILLIUS, F. A., DRY, T. J.: Results from Trichlorethylene Inhalations in the Anginal Syndrome of Coronary Sclerosis, Amer. Heart Jour. 14:659 (December) 1937.

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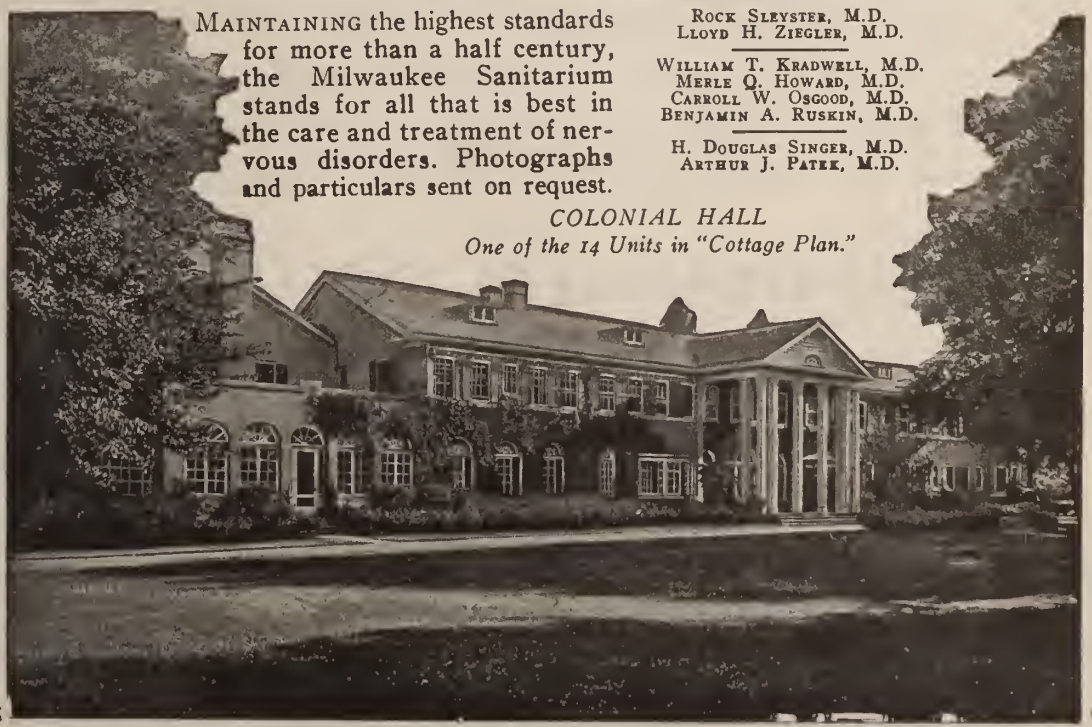
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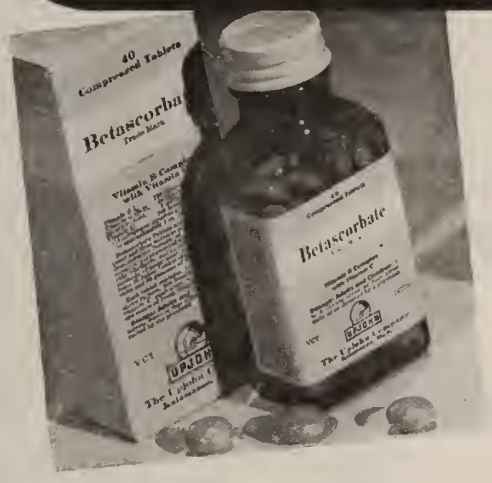
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Iodine	Magnesium	Sulfur

However, copper, manganese, zinc, and apparently cobalt must now be added to this list of elements considered indispensable or desirable in nutrition. Also, analyses of animal tissues have disclosed the presence of the so-called "trace elements" (aluminum, silicon, arsenic, fluorine, bromine, barium, rubidium, nickel, and selenium). Which of these perform definite roles in mammalian metabolism and which are present as contaminants, future research alone can decide (2).

Although the specific functions of all the essential minerals may not be completely known, it is apparent that many of these inorganic elements—in the form of their salts or ions—are associated with vital body activities. Thus, the initiation and continuance of cardiac function, the maintenance of osmotic relationships of tissues and of the acid-alkaline balance, and the formation of bony and calcareous tissue and of hemoglobin are a few of the vital functions of the minerals (1). It should be evident that the above quotation is in no wise an overstatement of the importance of the minerals in nutrition.

As to their occurrence in nature, the minerals are rather widely distributed in foods, although the extent to which they may occur—even in the same food variety—is known to be variable (3). No one food or class of foods has been richly endowed with *all* the elements essential in nutrition. Consequently, to insure an optimal intake of minerals the diet should be planned to include—in so far as possible—all food classes.

In the preparation of foods for the table, attention should be given to preservation of their mineral values. Because of their water-soluble nature, certain minerals may be lost to the cooking water during food preparation. Therefore, to obtain the full mineral benefits of foods, the cooking water containing the extracted minerals should in some way be utilized.

During commercial canning, food is cooked in a limited amount of water or brine while contained in the sealed can. Thus, solution losses of inorganic elements are controlled and by using the entire contents of the container the consumer will obtain all the mineral values of the food packed therein. This provision in practically all commercial canning procedures renders canned foods valuable and convenient in formulation of diets calculated to supply optimal amounts of the inorganic elements essential for complete human nutrition.

AMERICAN CAN COMPANY
230 Park Avenue, New York, N. Y.

REFERENCES

(1) 1939. Mineral Metabolism, Alfred T. Shohl, Reinhold, New York.

(2) 1940. Nutrition Abstracts and Reviews 9, 515.

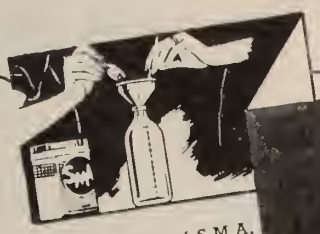
(3) 1938. Univ. Colorado Studies 25, 181.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixtieth in a series, which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

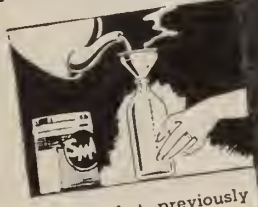


The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

S.M.A. SAVES TIME—SAVES MONEY



Empty measuring cupful of S.M.A. Powder firmly packed, level full, into funnel, using scraper for pushing powder into bottle.



Add one ounce of hot, previously boiled water for each measuring cupful of S.M.A. Powder.



Cap bottle and shake contents until thoroughly mixed. Place in refrigerator until ready to use. Then bring to body temperature before feeding.



Enough For 24 Hours Made up at Beginning of Day

S.M.A. is so easy to prepare. Enough for the entire 24 hour period may be made up at the beginning of the day and stored in the refrigerator until ready to feed. It should then be brought to body temperature and fed at prescribed intervals.

S.M.A. is economical, too, because, aside from orange or tomato juice for the required vitamin C, no other vitamin supplements are usually necessary. S.M.A. provides vitamins A, B_1 and D in amounts sufficient for the normal, full-term infant. When kept in the refrigerator, it retains its nutritional value indefinitely.

S.M.A. IS ECONOMICAL. INFANTS RELISH IT, DIGEST IT EASILY AND THRIVE ON IT.

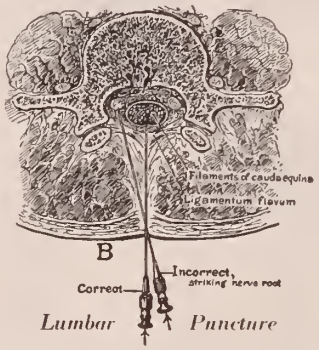
S. M. A. is a food for infants — derived from tuberculin-tested cow's milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and physical properties.

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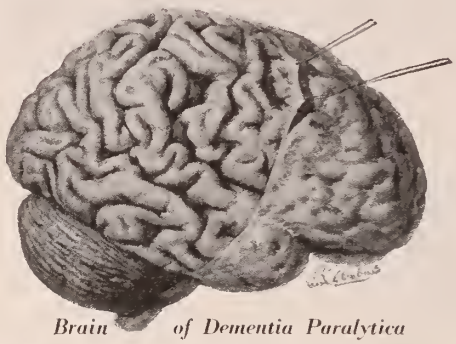
in Neurosyphilis

TIMELY DIAGNOSIS



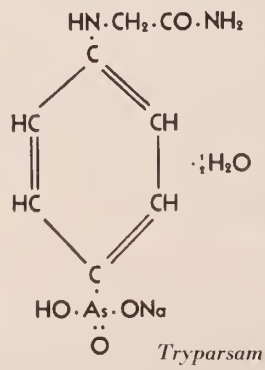
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* (*The Modern Treatment of Syphilis, by Joseph Earle Moore, M. D. Charles C. Thomas, Springfield, Ill., and Baltimore, Md., 1933.— By courtesy of author and publisher.*)

Literature on Request

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COUNCIL ACCEPTED AMERICAN MEDICAL ASSN. ACCEPTED

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Mandelic Acid

"... an effective remedy for Bacillus coli pyelitis in children."

NEWNS and WILSON[1] reported that, in 36 cases of pyelitis in children under 12 years of age, 24 of which were acute, the urine was rendered sterile in all but three instances, often within a week of the initiation of treatment. They conclude: "Mandelic acid appears to be an effective remedy for Bacillus coli pyelitis in children. The most striking feature is the rapidity with which the urine is rendered sterile."

Cook,[2] of the Mayo Clinic, in a report covering 600 patients, showed that, in 90 per cent of cases with uncomplicated bacillary infections of the urinary tract, the urine was rendered sterile by mandelic acid therapy.

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* A Squibb trade-mark.

[1] Newns, G. H., and Wilson, Reginald: *Lancet* 2:1087, Nov. 7, 1936.

[2] Cook, E. N.: *Minnesota Med.* 20:512, Aug. 1937.

Two Salts in Tablet Form

Squibb Mandelic Acid preparations offer a particular advantage in that they are supplied in tablet form exclusively and are far more agreeable and convenient to take than liquid preparations. Both the calcium and ammonium salts are available under the Squibb label. While both act to sterilize the urine, the calcium salt is the more pleasant to take, being more nearly tasteless.

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7½ grains, in bottles of 200 and 1000
3¾ grains, in bottles of 100 and 500

Tablets Ammonium Mandelate—enteric-coated
5 grains, in bottles of 200 and 1000

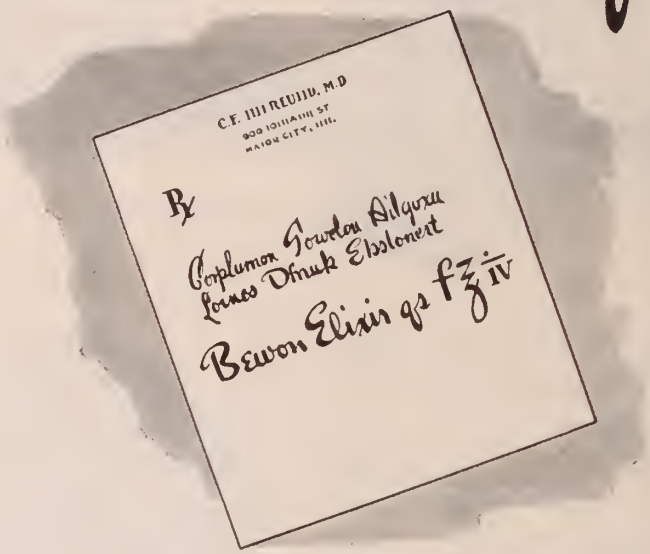
Tablets Calcium Mandelate—uncoated
7½ grains, in bottles of 200 and 1000

To facilitate the control of urinary acidity, Nitrazine Test Paper and color chart are supplied with all bottles. With Nitrazine*—a sensitive indicator—one may accurately determine the acidity or alkalinity of the urine.

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For thirty years, S. H. Camp & Co. has maintained consistent research to produce garments for *general wear,* as well as for postoperative, hernial, maternity and other prescription conditions; garments which give anatomically correct support to patients with postural problems. Camp Supports promote better posture and produce a pleasing silhouette *safely.* We believe that your consideration of Camp Supports in this light will be helpful to many of your patients.

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World's Largest Manufacturers of Surgical Supports • Offices in New York; Chicago; Windsor, Ont.; London, England • Expert Camp service is available in good stores everywhere. *Never sold by door-to-door canvassers.*

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Two Years of Wide Use

SULFANILAMIDE
WITH
CITRA-LACTATE

An Effective Sulfanilamide Liquid for Oral Use

The advantages of Sulfanilamide with Citra-Lactate have been established by more than two years of wide clinical experience. During this period, virtually every type of infection in which sulfanilamide is applicable has been treated; the incidence of side actions and nausea has been unusually low, and the therapeutic response as satisfactory as that obtained with the dry drug. Laboratory studies have shown that Sulfanilamide with Citra-Lactate, when compared in equivalent dosage to the dry drug, appears in the blood stream more quickly, produces higher blood levels, and does not lead to an appreciable decrease in the blood CO_2 combining power. Since 30 grains of sulfanilamide have been incorporated into each fluidounce (1 grain per cc.), dosage is easily regulated. The preparation is not unpleasant in taste, is administered in water, hence is readily taken by children and is preferred by many adults to tablets.

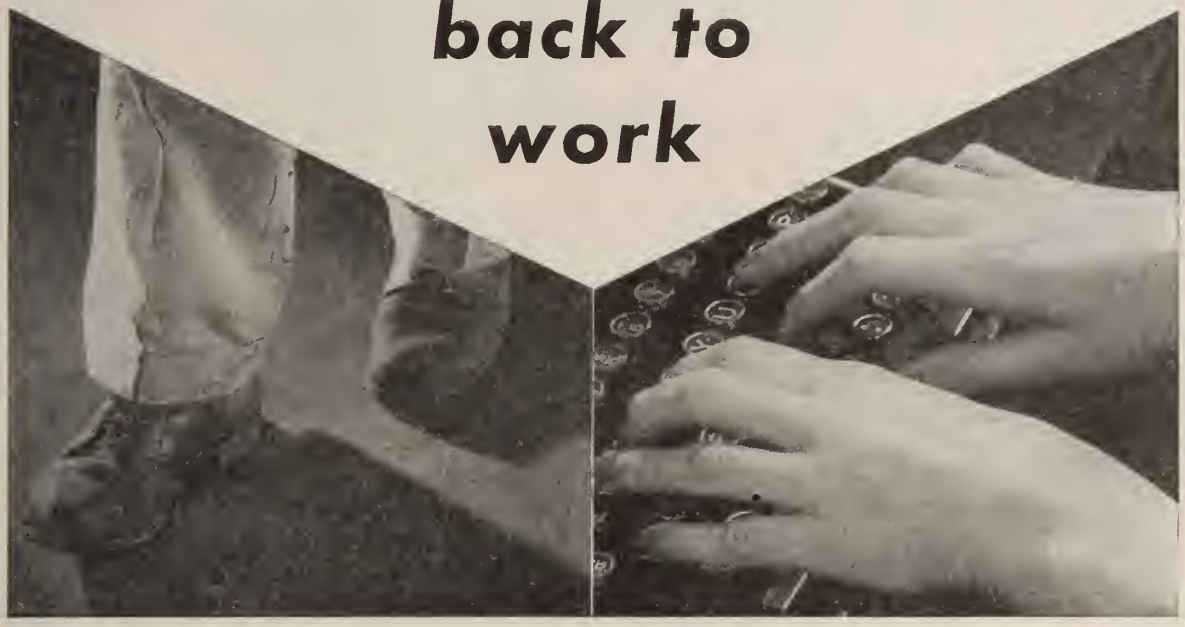
Sulfanilamide with Citra-Lactate replaces, in equivalent dosage, the tablets whenever sulfanilamide is required; "no sodium bicarbonate is used when this solution is administered."* Available through all pharmacies in 6 ounce bottles.

*Stoesser, A. V., and Johnson, E. V., Journal-Lancet *60*: 1 (Jan.) 1940.

Physicians are invited to send for the details of the findings referred to above.

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ERTRON

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Ertron is not an analgesic but it relieves the pain. It is not a mechanical measure but it unlocks the joints. Ertron is effective in all types of chronic arthritis.

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Clinically superior to ephedrine in the relief of hay fever symptoms—

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PROPADRINE HYDROCHLORIDE, in its application in the symptomatic relief of hay fever patients, is pharmacologically equal to ephedrine and *clinically superior* because of its comparative freedom from side-reactions. Its clinical superiority has been emphasized by independent investigators in these statements:

1. Propadrine Hydrochloride may be administered in therapeutic doses with relative freedom from nervousness, insomnia, tachycardia and palpitation.

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J. S. Templeton, M. D.

President, Illinois State Medical Society, 1940-1941

Illinois Medical Journal, June, 1940; in two parts; Part 2.

ILLINOIS MEDICAL JOURNAL

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Editorials

LAWYERS NEXT

H. L. Mencken, in "America's Future," says: Certainly the lawyers in the Department of Justice must be well aware that an analogous effort to invade and deprofessionalize their own profession has been under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are destructive of their professional status.

WE HAVE A DOCTOR

"We have a doctor in our community" would have made a headline for any village paper in Illinois one hundred years ago. At that time, when a small number of physicians were putting the first breath of life into a State Medical Society, there were many towns without nearby medical service. Persons in areas of fifteen to thirty miles wide frequently had difficulty in securing the personal service of a doctor. And it is to be remembered that fifteen miles constituted a barrier of time to messengers appealing for care and to the physician answering the call. The ordinary dispensing to the ill of the day called for frequent recourse to the family doctoring book or to that section of the cookbook filled with remedies of ancient merit. Midwives, "grannies" of local renown and itinerant vendors filled in the gaps of desire for attention where medical care could not be obtained or where its purveyor was disliked. The drug store was less common outside the physician's office than it was in it: a great variety of sure cures were obtainable at the only store of the neighborhood. Flour, pickled meat and opium could

be had over the same counter by anyone who had the credit. Transportation of that day in Illinois was chiefly by *man* power and by *horse* power. Water power was little used and steam was only making a practical appearance.

Travelable ground and rivers assisted here as elsewhere the utilization of the various sorts of power as a means of moving to and settling of the then vast spaces of the state. The likely landing places on river banks and the interval stations on dry post-roads became nuclei of developing towns and cities. Aside from the entrepreneur inducements of trade, the chief considerations in the choice of a community were the possibilities to secure medical care and schooling. In general, the motive for moving out to Illinois" was an economic one even among those with juvenile escapist attitudes. Each person wished to obtain something. Along with or through the means of that something he intended to have education and medical care. He knew certain *values:* work, faith in his work, the utility of education, and the advisability of medical care, to list but a few.

Upon this economic drive and sense of values the accomplishments of medicine in Illinois and the whole United States were founded.

Government subsidy and political maneuvering contributed nothing to advancement in public health comparable to the mediums of education and the economic ability of the people. This ability came from work—work which a hundred years ago was largely rural. The produce of Illinois, as of all the prairie countries, was supplying a part of the food needs of the seaboard industrial centers, but a great deal more was going to Europe to feed its armies and its overcrowded cities. These cities were in a sense the prototype of the coming American city—unplanned, degenerating at the core, called into being by a machine age. The addition of steam to the machine accelerated the growth and increased the congestion of all cities. The cities here and abroad took the farmer's produce, and here they also took his children. Along with his children, the cities here also copied his sense of values—work, faith in one's work, honesty, love, justice, education, health. These were not abstract considerations to these migrants from rural communities to cities. They were realities easily observed in their own home areas where time and intimate knowledge of many families fully demonstrated their truths. In the knowledge of these values there was *personal security.*

The hue and cry today is for *social security*—what, in one hundred years of the growth of a state and its medical society has brought about this shift of viewpoint? Apparently it is a development of city life; more specifically it may be described as a result of certain deteriorating trends in the cities. Their unplanned growth has resulted in the physical deterioration of tremendous areas; in these areas moral deterioration has kept equal pace. The values which the farm boy a generation or two before brought to the city are lost sight of and personal security is gone with it. But degrading trends have not alone made their appearance in the slums. Adverse cultural influences have made their mark in places of power and a gross interest in materialism has come to dominate many otherwise capable individuals. The importance of an individual is denied except for what he can accumulate. So these people, too, lack personal security, since if for a minute they relax their acquisitiveness they fail. To these persons absorbed in their materialism *social* security would appear to offer most. If they can, by surrendering a little, protect themselves from losing all, they will have been following the only religion they know. Their philosophy does not improve anything—it only maintains the current status. This philosophy has dominated the management of political affairs in Europe for many years and, of course, stemmed directly from the vested interests entrenched in baronial systems.

Does the trend of living in Illinois make it advisable to look forward to an unfruitful social security as the only course for living? Must we sterilize culture at the level of urban deterioration? We must, of course, be aware of the values of our cities. We must be equally interested in arranging our communities in such a way as to afford an opportunity for the development of personal security. Dr. Carl Snyder in his book, "Capitalism the Creator," touches on both these considerations as follows: "No principally agricultural or pastoral nation we know of has ever grown rich, powerful and civilized. These are the fruits of wealth and enterprise; and these in turn of organized industry and trade. As true today as in the most distant times—all this represents the will to live, to gain, to discover, to conquer; and—whenever these begin to wane

and weaken, and a nation is given over to visionaries, doctrinaires and novices in "social experimentation" its decadence has begun.

At the beginning of our second hundred years we should not adopt any attitudes which are related to philosophies springing from decadent, fixed social attitudes in Europe. Change is the dominant theme in our culture. It is being expressed in the depopulation of our cities. It is expected by reliable predictors that the current census will show a definite trend out of Chicago to the suburbs. Industry continually looks about for methods of decentralizing certain phases of production. These changes in location of people may be taken as signs of a groping for an environment more suited to personal security. It indicates an attempt to find a place more valuable for living and working. Perhaps it is not too much to hope that we may be on the verge of a spiritual awakening—that there may be a new attention to *values* on which the *personal security* of individuals depends.

Personal medical service is one of the necessary components of personal security. Its accomplishments here have nowhere been excelled by a socialized medical service. We need now to lend our encouragement to those business and political forces which will so contribute to the welfare of the people as to enable those persons who wish health to earn the means to secure it. People must *make* their health; they cannot be clothed in it by well-intended legislation. As in the far past years, individuals now interested in their health will turn to an authority who evinces in them a deep personal interest; they will continue to reciprocate that attention with a possessive confidence in *their* doctor. In the coming century, as in the last, personal security and satisfaction will be found in those who say "We have a doctor."

USING THE MEDICAL PROFESSION AS ITS CATSPAW

Regimentation or Americanism—which? Ask the Doctor.

Shall medicine and its votaries be denied that important fundamental—equality of opportunity?

What is the kernel of true Americanism and of man's humanity to man may be capsuled in the phrase—"equality of opportunity."

This equality of opportunity is guaranteed to citizens of the United States by the Declaration of Independence and confirmed by the Constitution. It is unfortunate that a destructive organized movement directed for some years past against this fundamental principle of human liberty should be using the medical profession as its catspaw.

To drug national census against this statement as we will, fails to change the situation. No amount of opportunism of any degree stops the frightful parade of socialistic doctrines and of bolshevistic tenets that are creeping into this great land under the banners of revision and revamping of the conduct of affairs medical. The medical profession quite generally admit frankly enough that some adjudication must be made between the cost of medical education, the cost of medical service to the public and—let this thought be well sunk into the minds of the laity —*the cost of medicat service to the medical profession!!* Figures show, that so far as material things are concerned, no profession, trade, craft, science or art repays so small a percentage for the time, money, health, strength in youth invested as does the practice of medicine. The clergy, of course, are not counted in this schedule, for with material things the clergy concerns itself not at all, nor are its profits so to be reckoned. Because medicine is the profession dealing most closely, outside of the church, with the humanities and with laws of health and nature that refuse standardization, medicine is the objective against which is aimed this bolshevistic drive. What revision is necessary to be made in the cost of acquisition of medical knowledge and its dispersement is a technical matter that the medical profession is thoroughly capable of handling within the confines of its own organization. The doctors can correct their own shortcomings better than any neighboring baker or garageman can do this for them. The hippocratian oath has already bound every ethical physician in stronger bonds of equal rights for mankind, brotherly consideration and the finer humanities than any totalitarian regime can evolve in the way of coercive contracts, collusive agreement or despotic standardization. One of the first things the medical student learns is that there is no casts in birth or death. All that can be hoped for is "equality of opportunity."

Since medicine ranks next to the church in its unselfish spiritualities, having destroyed the church, naturally enough the next target of the bolshevists in this America—whose wealth they envy and seek to ape—is the destruction of the medical profession.

All the regimented interference against which the editor of this JOURNAL has stormed and argued for nearly two decades from handicapping lay dictated legislation, are the illegitimate offspring of bolshevism, playing the pretender to the rights of American citizenship and the American instituted equality of opportunity.

Now fire must be fought with fire. Organized misrule is waging a devastating war that organized sanity must come back. The fight is immediate. It must be to a finish. Forces of medicine must organize as never before to fight for the preservation both of the sanctity of their own standards and of true Americanism—the great equality of opportunity.

I need not emphasize how tremendously valuable co-operative services can be right at this present juncture in our American business and professional life. It forms a potent factor in helping to boost us along the path that leads upwards to the plateau of prosperity and professional stability.

Who has voiced this sentiment better than did Benjamin Franklin? When the Declaration of Independence had been signed, Franklin turned blithely to the group and remarked: "Well, gentlemen, we had all better hang together now. For if we don't we shall hang separately."

THE ONE HUNDREDTH ANNUAL MEETING

The Centennial Meeting of the Illinois State Medical Society was held in Peoria on May 21, 22, 23, 1940, according to the Official Program which was published in the May ILLINOIS MEDICAL JOURNAL.

The attendance was the largest ever to be registered at a downstate meeting in the history of this Society, the total registration being more than 2,100. More than one-half of the time was devoted to general meetings with all sections uniting for the presentation of programs of general interest to all physicians, and this feature was highly appreciated by all those present.

The Stag entertainment usually presented on Tuesday evening was replaced by a Joint Meeting with four speakers on the program, and this was a popular feature of the meeting. The Orations in Medicine and Surgery were delivered by Drs. Leonard Rowntree of Philadelphia, and Frank H. Lahey of Boston, both of these speakers discussing subjects which were of general interest to all physicians.

The President's Dinner on Wednesday evening was attended by approximately 500, all of whom thoroughly appreciated the unusual program. At the President's Dinner, officers of the Illinois State Dental Society, State Bar Association and the State Pharmaceutical Association were present as guests of the Society. Dr. Nathan B. Van Etten of New York City, President-Elect of the American Medical Association, was the guest of the Society on Wednesday and made several official presentations during the day. Dr. Van Etten was unanimously elected to Honorary Membership in the Illinois State Medical Society by the House of Delegates at the Tuesday session, and at the President's Dinner, was elected to Honorary Membership in the Fifty Year Club and was presented with the usual certificate of membership and the official emblem, by Dr. James H. Hutton, the retiring President.

The Scientific and Technical Exhibits were more extensive than ever before, and attracted much attention during the meeting. The Hall of Health was displayed in the large Peoria Illinois National Guard Armory, and many interesting health exhibits for the public were shown during the week.

At the closing meeting of the House of Delegates on Thursday morning, the following officers were elected.

Dr. Chas. H. Phifer, Chicago.....Pres.-Elect
Dr. Arthur Sprenger, Peoria.....1st Vice Pres.
Dr. Jas. H. Finch, Champaign..2nd Vice Preg.
Dr. Harold M. Camp, Monmouth.....Secretary
Dr. A. J. Markley, Belvidere.....Treasurer

With a fitting ceremony, Dr. J. S. Templeton, Pinckneyville, was induced into the office of President by the retiring President, Dr. J. H. Hutton, and the new President gave a short, but highly interesting address in which he discussed a number of our present day problems in medicine, and asked for the complete cooperation of all members of the Society during the coming year.

By unanimous vote, the House of Delegates selected Chicago for the 1941 Annual Meeting, subject to the approval and final arrangements by the Council.

AN APOLOGY

May issue of the JOURNAL contained the pictures of over ninety-five per cent. of past presidents of the Illinois State Medical Society, starting at the inception of the organization in 1840 and continuing for the hundred year period ending in 1940. At the time of going to press, pictures of several past presidents could not be located in time for publication in the Centennial issue. Pictures of a few outstanding nationally known ex-presidents, while readily available, were not located in time for the May number. In this issue we publish pictures and short obituaries of Former Presidents Alfred C. Cotton, William L. Baum and Colonel Charles D. Center. Pictures of other missing former presidents, provided they can be located, will appear in subsequent issues of the JOURNAL.

PICTURES OF PAST PRESIDENTS AND SECRETARY WANTED!

Officers of the Illinois State Medical Society are extremely anxious to complete the file of pictures of all past presidents. There are a number missing and it is hoped that someone may be able to furnish copies to the Editor of the JOURNAL, Charles J. Whalen, M. D., 25 East Washington Street, Chicago.

President's Name	Year
Samuel Thompson	1851
C. N. Andrews	1854
A. H. Luce	1864
J. M. Steele	1865
S. W. Noble	1867
G. W. Albin	1871

Secretary's Name	Year
H. Shoemaker	1851

THEY ARE GRADUATES OF THE UNIVERSITY OF ILLINOIS COLLEGE OF PHYSICIANS AND SURGEONS

It is a conspicuous coincidence that the president of the American Medical Association, Doctor Rock Sleyster, and Doctor Charles Herbert Phifer, president-elect of the Illinois State Medical Society, and the councilor of the sixth district of the Illinois State Medical Society, Doctor Thomas B. Knox are all three graduates of the class of 1902 of the University of Illinois, Medical Department. Adopting the slogan of the Salvation Army, "You Can't Keep a Good Man Down," is highly applicable in the case of the gentlemen mentioned.

REPORT OF COMMITTE ON AWARDS HALL OF HEALTH

1. Boy Scouts of America. Creve Coeur Council.

2. Accident Investigation Bureau, Peoria Police Department.

3. Illinois Physicians and Surgeons. Photographic Exhibit. Dr. Carl E. Black.

4. Peoria Public Schools.

5. The Evolution of Resuscitation. Chicago Rapid Transit Co.

SCIENTIFIC EXHIBITS

Original Work

1. Carcinoma of the Colon. R. K. Gilchrist.

2. Neurocirculatory Clinic. Geza de Takats.

3. Cerebral Manifestations in the New Born. Abraham Levinson.

4. Avitaminosis in the Alcoholic. Don C. Sutton and John Ashworth.

5. Plastigut—A New Suture Development. Joseph E. Bellas, Peoria.

6. Controlled Evaporation of Liquid Oxygen. A New and Simple Method of Production of Oxygen Gas at the Bedside. John A. Mathis and Mr. Roland Milan, Pinckneyville.

EDUCATIONAL EXHIBITS

1. Treatment of Seminal Vesiculitis by Transurethral Catheterization and Dilation of the Ejaculatory Ducts. Robert H. Herbst and James W. Merricks, Chicago.

DANGEROUS DAN M'CROBE

A bunch of germs were hitting it up
In the bronchial saloon;
Two bugs in the edge of the larynx
Were jazzing a ragtime tune.
Back in the teeth, in a solo game,
Sat dangerous Ack-Kerchoo;
And watching his pulse was his light of love,
The lady who's known as Flu.—*Exchange.*

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois
Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Those who attended the annual meeting of the House of Delegates of the Illinois State Medical Society at Peoria this month must have been struck by the interest of the House in problems, economical, and their agreement on the proper stand of the profession thereon.

Particularly encouraging to the Medical Economics Committee was the interest shown in the report on Voluntary Health Plans for Illinois. The report of the sub-committee headed by Dr. W. M. Hartman was listened to carefully by the House and the recommendations of the Committee were accepted without a dissenting vote. This report will be available to the entire membership of the Illinois State Medical Society in the ILLINOIS MEDICAL JOURNAL in the near future. We hope that every member of the society will take time to read it and if anybody has a difference of opinion, they will feel free to get in touch with either Dr. Hartman or the Chairman of the Committee.

In spite of the acuteness of the disaster in Europe at the time of the meeting, there was a general feeling of hopefulness as to the future of American Medicine, even though the spectre of the growth of Dictatorship hung over the entire world at that time. Apparently the attention of the New Dealers in Washington is temporarily distracted to the dangers of a dictator's peace in Europe so that there seemed to be little time for regimentation of the medical profession either in the grandiose manner of the Wagner Bill or the more modest Hospital Plan of the present session. But as always we should not in any manner allow our opposition to such plans to cease. As soon as the European debacle is showing evidence of a final solution, we may be sure that the professions of the United States will again receive attention. Meanwhile, we can continue to contact our legislators and show them that we are on the alert.

On Page 33 of the May issue of *Nation's Business* is the finest article on the problem of American Medicine to come to the attention of the writer. We urgently request that every member of the Illinois Medical Society who can possibly obtain the loan of this magazine, to do so and take time enough to read carefully the entire article. If you will do so, you will receive a most complete and authentic story of the history of the movement, with the dangers inherent therein. The Article is entitled "The Case FOR American Medicine." I am reliably informed that through the assistance of the Chamber of Commerce of the United States and its component local Chambers parts of this article are to be distributed throughout the United States to both the laity and the medical profession. In case you receive either the cartoon or the small pamphlet entitled "Health by Political decree," be sure and give both of them the widest possible distribution. Coming as they do under lay sponsorship, these pamphlets have a much greater range of influence than when they are under medical sponsorship.

As a result of the large amount of material used in the preparation of the anniversary number of the ILLINOIS MEDICAL JOURNAL as well as the increased amount of work imposed on the Editor of the JOURNAL, it was necessary to omit one of the proposed articles for this Column last month. We hope that space will be available at this time to include it as it gives a most excellent review of proposed legislation affecting the medical profession before the present Congress.

This may be the last article by the present writer, for at this time all the Committees of the Council are appointed and it is very possible that there will be a change in the Chairman of this Committee. So at this time, we wish to thank the members of the Illinois State Medical Society for their interest in the work of the committee the past several years, in fact ever since the committee was formed. Through both personal contact and letters, the writer has

made several very good friends and has received an insight into the minds of innumerable members of the profession throughout the state. As a result, he has increased his already high regard for the medical profession as a whole as well as many as individuals. The cooperation he has received from the rank and file of the profession has been only second to that of the members of his committee. The Cooperation of the special Committee, appointed to study the subject of Voluntary Health Insurance during the past years was particularly valuable and the Chairman wishes to thank all of them, but particularly the Chairman, Dr. W. M. Hartman.

E. S. Hamilton, Chairman.

DO YOU KNOW THAT

Out of England's mystery of exploding gasoline storage tanks has come the amazing discovery of a species of bacteria which can live on kerosene and ferment it into ethane and methane fuel gases, just as ordinary bacteria can ferment sugar into alcohol?

Air in the Stratosphere is hot enough to boil water?

Rumania has grain, wood and the richest oil fields in Europe?

Such dangerous germs as the streptococcus can be fought better at cool temperatures than at hot ones?

Fresh pineapple juice has a specific medicinal value?

Synthetic camphor, made from turpentine, has broken Japan's monopoly? It is now being produced by the DuPont Company in U. S.

A NEW FEDERAL HEALTH PROGRAM

Modest approach to replacing $8,500,000,000 Wagner Plan.

Local supervision planned in rural hospitals to avoid "socialized medicine" charge.

Bogged deep in the mire of controversy is the New Deal health bill which Senator Wagner (Dem.), of New York, tried to launch more than a year ago. Last January, President Roosevelt began an effort to save a modest part of the wreckage. Today, the Presidential salvage work is giving promise of success.

Showing signs of motion is a project which Mr. Roosevelt suggested to Congress in the form of a special message on his fifty-eighth birthday. What the President asked then was the construction of some 50 rural hospitals at federal expense.

Local Operation Planned—When completed, these hospitals would be leased to the appropriate local authorities, who in turn would operate them and pay all their maintenance costs. Last week Senate leaders were anticipating a favorable committee report on a bill containing the essence of Mr. Roosevelt's suggestions.

Compared to the original Wagner Health Bill, the rural hospital program is not pretentious. The fruit of three years' labor by a specially appointed committee, the original national health program called for a ten-year outlay of no less than $8,500,000,000. The rural hospital proposal entails a $10,000,000 appropriation for materials and $2,500,000 for WPA construction labor.

Five-Point Program—Principle of the original Wagner Bill was a system of federal grants-in-aid to be matched by individual States according to their resources. The combined finds were to be applied to a program divided into five major sections: child and maternal health services; general strengthening of public health measures against tuberculosis, venereal diseases, malaria, pneumonia, cancer, and mental ailments; construction of additional hospitals with a 360,000-bed capacity and 500 new health centers; a general program of subsidized medical care, and a system of disability health insurance.

The present plan hits only partially at one of these objectives, the hospital construction aim. But it goes beyond the principles of that bill in directing federal aid on the basis of need, without requiring the beneficiaries to share any of the building costs. The operating costs, which are all that the local authorities are asked to bear, are estimated at $100,000 per year for an average 100-bed hospital as contemplated in the program.

Surveys made by the Public Health Service in Washington show that there are 259 rural areas in the United States that could well use the projected hospital units. In all of these districts the number of hospital beds available to the local population is less than two per thousand. In many cases, Public Health officials assert, long and difficult journeys lie between the rural patient and adequate medical facilities. Not only are such trips hazardous for the seriously ill, they point out, but the cost of transportation is often prohibitive for the poor.

In most cases, the greatest need for rural construction is in localities that can least afford them. High on the list of recommended districts are southern States where economic conditions not only preclude a building program, but foster acute health problems. New England, on the other hand, has no acute hospital shortage.

The 50-hospital project, if adopted, would supply less than one-fifth of these rural deficiencies. The President recommended in his special message that the program be directed particularly toward those areas where no facilities at all now exist.

To select these sites, the bill provides that the Surgeon General of the United States shall decide, with the advice of a council of six chosen from medical or scientific leaders, where the need is greatest. The measure thus removes the placement of these projects from the arena of congressional log-rolling.

Under Local Supervision—By turning over the operation of the hospitals after they are built to local medical supervision, the proposed act avoids the main stream of criticism which has branded the broader program as "socialized medicine." But representatives of private medical groups have asked for an amendment that will prevent the Federal Government from operating the hos-

pitals if local authorities default on their obligation to pay maintenance costs.

Favorable action on the bill is being pressed by the Administration as an opening wedge for a vast new field of possible social legislation, an experimental step on the road to a comprehensive national health program bringing adequate medical care within reach of the country's underprivileged.

Correspondence

DECORATING THE GRAVE OF RUDOLPH ROUSE

Dr. Rudolph Rouse one of Peoria's pioneer physicians, was one of the twelve physicians who met in Springfield in 1840 to organize the Illinois State Medical Society. When the Society was reorganized in 1850, Dr. Rouse acted as Chairman and President "pro-tem," then in 1852 he acted as President of the Society. He was the first mayor of Peoria, and a prominent figure in the Peoria of one hundred years ago.

On Monday, May 20th, an official party consisting of Drs. James H. Hutton, President; J. S. Templeton, President-Elect; Harold M. Camp, Secretary; Rolland L. Green, Councilor, representing the Illinois State Medical Society; Orville E. Barbour, President of the Peoria Medical Society and Arthur Sprenger, Chairman of the Committee on Arrangements, went to the cemetery and with a short ceremony, placed a wreath on the grave of Dr. Rouse.

An attorney who is a member of a firm which has been the legal adviser of the Rouse family for more than eighty years, was present, and he stated that a daughter of Dr. Rouse is still living, and is in her ninety-eighth year, but was unable to be present on account of ill health.

In the annual address of the President, Dr. Hutton gave some interesting data relative to the activities of Dr. Rouse over a period of years, and told of the interest he maintained in this Society, throughout his professional life.

CONDEMNS OF PATENTING OF DRUGS BY UNIVERSITIES OR FOUNDATIONS

The Medical Association of the State of Alabama begs to call to your attention the following important resolution adopted by it on April 18, 1940:

Whereas, There is a growing tendency to patent drugs in the name of universities and foundations in connection with universities; and

Whereas, These patents are presented to the institutions by the discoverers; and

Whereas, The discoverers of the products are usually medical men; and

Whereas, The effect of the patents is to increase the price of the drugs because of the royalties imposed by the said foundations; and

Whereas, A considerable proportion of patients in need of the new products are prevented from buying them by reason of the necessarily high prices asked; and

Whereas, This hardship is imposed upon the needy public through the acts of the discoverers under the guise of foundations;

Be It Resolved, That The Medical Association of the State of Alabama condemns as unethical the patenting of drugs or medical appliances for profit whether the patent be held by a physician or be transferred by him to some university or medical research foundation, since the result is the same, namely, the deprivation of the needy sick of the benefits of many new medical discoveries through the acts of medical men; and

Be It Further Resolved, That copies of these resolutions be sent to the leading medical associations and journals, to the leading medical colleges of the United States and Canada, and to the secretaries of all state medical associations as well as to that of the District of Columbia.

Douglas L. Cannon, M. D.,
Secretary.

PROMINENT LAY ORGANIZATIONS APPRECIATE ABILITY OF SPEAKERS FROM THE ILLINOIS STATE MEDICAL SOCIETY

President Lake Forest Woman's Club: "We greatly enjoyed the doctor's keen sense of humor and at the same time had a most enlightening and instructive talk."

President Forest Ridge Woman's Club: "Everyone enjoyed Dr. C. and his talk as they all felt they got a great deal out of it. We are so glad to have had the privilege of having this doctor speak before our club."

President Kankakee Woman's Club: "Spoke well, had nice personality and the club liked his lecture very much."

President Woman's Club, Peoples Church, Chicago: "His talk was clear, concise and instructive, told in a very interesting manner. The audience was pleased."

Professor of a college: "Very good. Well organized. Not too simple, and not too technical."

President Tremont Woman's Club: "Doctor gave a splendid talk on the subject and was heard by the student body of 380 students, the faculty and about 90 women from the different clubs. His lecture was clearly given and was most interesting from beginning to end."

President Geneseo Kiwanis Club: "Very excellent presentation, well received and appreciated. 'One of the best talks of the year' was one remark heard."

President DeKalb County Federation of Women's Clubs: "Best talk ever heard on that subject."

DeWitt County Teacher's Institute, County Superintendent of Schools: "I heard many compliments on this address by teachers who were present. I consider it one of the best addresses made before the 1939 Teacher's Institute."

Jackson County Teacher's Institute, County Superintendent of Schools: "Subject covered in clear concise way and has created numerous favorable impressions among teachers."

President, Shelby County Federation of Women's Clubs: "This was one of the finest talks I have heard at a woman's club meeting, even a State meeting! Almost every woman came to me and told how thoroughly they enjoyed the talk and what a pity their husbands could not have heard it too."

Aurora Woman's Club: "Interesting and convicing speaker, easily understood by lay person."

Hinsdale Chamber of Commerce: "The doctor gave a very interesting talk; all the men enjoyed it and spoke of him very highly."

Senior Students Amundsen High School: "He was very fine and every one of the seniors enjoyed his talk. It gave us an idea of the number of fields in medicine. Thank you for such an interesting speaker."

American Legion Post: "Excellent speaker. Held audience throughout entire talk. Fine personality."

Macon County Home Bureau: "Such an excellent and informative talk deserved a much larger audience. Members present showed great interest in the questions which they asked. Several said they would report to fellow members who did not attend how much they missed."

Centralia Woman's Club: "Had pleasant manner, good appearance, immediately placed audience in receptive mood and kept it so. Gave a simple, straightforward discourse in a scholarly way. Forum discussion followed."

DeKalb Business and Professional Woman's Club: "Lecture very well given. Enthusiastically received. Members would be very glad to have him come back at any time. Delivery good. Personality good. Highly recommended."

REPORT OF EDUCATIONAL COMMITTEE

May, 1940

Special Work in Connection with Annual Meeting

Hall of Health—All exhibitors were secured for the Hall of Health. Blue prints were sent each organization with space marked and full instructions given.

Material was prepared for the Handbook of the Hall of Health. An extensive exhibit was prepared and displayed.

Assistant to Publicity Director—1,980 releases, written by Mr. Hagan, were mimeographed and mailed to newspapers of 19 counties in the Peoria area.

Photographs of out of state speakers and officers secured for Peoria papers.

Secured advance copies of papers to be presented.

Moving picture films obtained for showing at the Shrine Mosque and 2,000 schedules mimeographed.

Prepared exhibit of special publicity for display at the Shrine.

SPEAKERS BUREAU

52 doctors addressed lay organizations through the Educational Committee office. A number of doctors

appeared before lay groups of Peoria during the Annual Meeting.

RADIO

14 radio programs were given over Chicago stations with copies of the scripts furnished downstate county societies.

SCIENTIFIC SERVICE COMMITTEE

26 speakers were scheduled for the following societies—Beardstown Hospital, St. Clair, Henry, Will Grundy, Madison, Vermilion, Jersey-Greene, Bureau, Lake, Effingham, Coles-Cumberland, Stephenson, Iroquois, Knox, McLean, Whiteside, Lee.

1 Postgraduate Conference was arranged for the doctors of Northern Illinois with speakers from Missouri, Michigan, Illinois. The program began in the afternoon and continued through the evening.

PUBLICITY FOR MEDICAL MEETINGS

30 releases about Franklin County.
61 releases about La Salle County.
35 releases about Henry County.
35 releases about Effingham County.
40 releases about St. Anthony Hospital of Rockford.
47 releases about Bureau.
24 releases about Jefferson-Hamilton.
51 releases about Knox.
50 releases about Whiteside.

SERVICE TO COUNTY MEDICAL SOCIETIES

188 invitations prepared and sent for Franklin County.
300 invitations, La Salle County.
262 invitations, Jefferson-Hamilton County.
180 invitations, Henry County.
148 invitations, Effingham County.
88 invitations, Perry County.

SERVICE TO COUNTY MEDICAL SOCIETIES

92 invitations prepared and sent for Bureau County.
175 invitations, Knox County.
223 invitations, Whiteside County.

NEWSPAPER SERVICE

410 health columns to newspapers downstate.
64 health columns to Chicago newspapers.
645 editorial health columns to newspapers.
4,880 articles to lay list.
456 articles to hospitals.
476 articles to libraries.

Releases written and approved on the following subjects: Diabetes, Fitness in the Spring, Illinois Observes Mothers' Day, Do You Want to Become a Doctor? Depressions, Sore Throats, Medical Emblems, Esthetic Operations, Your Child's Vision, Taking a Vacation, The Skin and Its Care, Rheumatic Fever, Roadside Restaurants, Our Changing Dietary Habits.

CONTACTS WITH LAY ORGANIZATIONS

Prepared material for Health Chairman Illinois Federation of Women's Clubs.

Assisted State Commander Woman's Field Army for Control of Cancer.

Wrote letters to 403 Summer Round-up Chairmen of the Illinois Congress of Parents and Teachers giving names of officers of local county medical societies.

Furnished material for the State Meeting of the Illinois Congress of Parents and Teachers and Special Summer Round-up Articles for campaigns in all sections of the state.

Furnished program material to program chairmen of the Illinois Congress of Parents and Teachers.

Cooperated with Officials of Chicago Youth Week.

Prepared an exhibit for showing at the Annual Meeting of the Physical Education and Recreation Directors of the U. S. and as a result added one hundred new names to the mailing list.

Obtained pictures of all past Secretaries of the Illinois State Medical Society for the JOURNAL.

Respectfully submitted,

Jean McArthur.

OBSERVATIONS ON RESULTS OF STATE BOARD EXAMINATIONS

Chicago, Ill., March 26, 1940.

To the Editor:

Recently an interesting work was published presenting results of a survey of 89 medical schools in the United States and Canada. It is of educational value to anyone who is interested in evaluating medical education. When the student has finished his medical school, which has been judged by the survey mentioned, he has another hurdle, the examination for State licensure. The importance of State Board examinations in evaluating the finished product from the schools is still a controversial question. Should the examination for licensure be considered a final analysis of the graduate? It is probably true that the marks obtained in licensure examinations are not necessarily a yardstick by which we predicate the candidate's success or failure as a practitioner of medicine. It would seem that if we evaluate medical schools and give the ratings, such as, excellent, good or poor, their products, the graduates might well be expected to rate in a similar manner when given tests such as State Board examinations. Are we not justified perhaps, in expecting a graduate from a school rated, A or excellent to obtain the highest marks.

Perhaps the appended figures showing results of Illinois State Board examinations, since 1936 might be of interest. Various interpretations of the figures might be made, but it is not our purpose to draw conclusions at this time.

Arthur H. Geiger,
Member, State of Illinois
Medical Examining Committee.

SUMMARY OF THE RESULTS OF THE ILLINOIS STATE MEDICAL BOARD EXAMINATIONS OF GRADUATES OF THE MEDICAL SCHOOLS IN ILLINOIS, AS REPORTED IN THE JOURNAL OF THE A. M. A., FOR THE YEARS 1936, 1937, 1938, AND 1939

	The Chicago Medical School*		Loyola University		Northwestern University		Rush Medical College		Univ. of Chicago Div. of Biol. Sciences		University of Illinois		Totals for all Schools		Totals exclusive of C. M. S.	
	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade	No.	Avg. Grade
1936																
January	15	81.83	7	83.57	12	85.83	12	85.75	4	85.25	17	84.76	67	84.40		
April	3	84.66	3	82.66	15	85.00	6	84.33	2	85.00	2	84.00	31	84.55		
June	50	82.96	45	83.98	47	84.32	30	84.63	5	85.60	78	84.49	255	84.11		
October	15	82.86	4	83.75	15	84.73	14	84.57	5	84.60	12	85.83	65	84.40		
Totals	83	82.82	59	83.47	89	84.71	62	84.80	16	85.12	109	84.67	418	84.17	355	84.22
1937																
January	10	82.80	3	86.33	5	87.40	14	84.79	2	83.50	18	84.67	52	84.67		
April	5	85.60	1	87.00	14	85.64	15	85.60	3	85.33	1	89.00	39	85.72		
June	55	83.15	60	82.68	30	84.03	24	84.50	4	84.25	89	84.17	262	83.63		
October	11	82.45	6	84.17	16	84.62	12	84.92	..	....	16	84.56	61	84.23		
Totals	81	83.16	70	83.03	65	84.78	65	84.89	9	84.44	124	84.34	414	84.05	333	84.26
1938																
Janary	6	82.50	..	....	10	83.90	4	84.50	4	85.50	18	84.56	42	85.05		
April	..	....	1	87.00	7	87.20	12	86.92	5	86.80	1	89.00	26	87.06		
June	44	83.20	69	82.42	29	83.38	31	83.87	7	83.29	97	83.84	277	83.33		
October	10	81.30	6	82.66	13	84.15	10	83.20	4	84.50	16	82.00	59	82.96		
Totals	60	82.81	76	82.50	59	84.10	57	84.61	20	84.85	132	83.75	404	83.59	344	83.74
1939																
January	1	81.00	2	81.00	16	83.94	9	84.22	1	86.00	17	83.65	46	83.74		
April	..	....	..	....	10	83.10	4	83.00	..	....	3	83.00	17	83.06		
June	35	81.51	65	82.18	32	82.91	24	83.37	5	83.00	112	83.55	273	82.86		
October	15	82.93	4	84.75	9	83.78	9	85.89	5	85.20	16	84.19	58	84.19		
Totals	51	81.92	71	82.29	67	83.11	46	84.00	11	84.27	148	83.62	394	83.17	343	83.32
Four Year Average	275	82.75	276	82.79	280	84.21	230	84.62	56	84.75	513	84.05	1630	83.75	1355	83.95
Highest Individual Passing Grade during 4 years		92.		88.		90.				90.		90.		91.		
Lowest Individual Passing Grade during 4 years		75.		75.		76.				78.		80.		76.		

*Not recognized by the A. M. A.

DEPARTMENT OF PUBLIC HEALTH

May 29, 1940.

Illinois Medical Journal.

Dear Sir:

On the attached sheet is a list of laboratories newly approved for pre-marital tests and pneumonia typing.

This is for publication in your journal.

Yours very truly,

H. E. McDaniels, Ph. D.,
Co-ordinating Bacteriologist.

APPROVED FOR KAHN & GC TESTS

Dr. Paul Ashley's Laboratory, 24 Illinois Street, Chicago Heights.

The Coleman Clinic, 24 N. Main Street, Canton.

Drs. French & Franklin Laboratory, 715 Lake Street, Oak Park.

The Ikemire Clinic, 201 Grand Prairie, Palestine.

Irving Pk. Clinical Laboratory, 4013 Milwaukee Avenue, Chicago.

E. C. Kelly Laboratory, 410 Main Street, Peoria.

Peoples Hospital Laboratory, 255 W. Cermack Road, Chicago.

Post Graduate Hospital Laboratory, 2400 S. Dearborn Street, Chicago.

St. Joseph's Hospital Laboratory, Cherry Street, Breese (Ge only).

E. J. Shalgos, M.D. Clinic. Laboratory, 1555 W. 79th Street, Room 223, Chicago.

Sixth Corps Area Laboratory, Fort Sheridan.

APPROVED FOR NEUFELD TYPING

Dixon Public Hospital, 403 E. 1st Street, Dixon.

Kewanee Public Hospital, 719 Elliott Street, Kewanee.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Sangamon County. One of the outstanding meetings of the Sangamon County Auxiliary was held Monday, April 22nd when the group was hostess at a spring luncheon and meeting in the Leland hotel for district No. 5. Representatives were present from Logan, McLean, DeWitt and Sangamon Counties. Mrs. D. M. Sirca, president, presided at the meeting. Mrs. H. J. Dooley of Oak Park, Ill., state president-elect and state organization chairman was the honored guest speaker. She outlined fully the policies and purposes of auxiliaries of the state of Illinois. Mrs. F. M. Hagen, Lincoln program chairman of Logan county, told in detail the work they are doing and of new plans for the future. Mrs. H. B. Henkel read "The Doctor's Wife" by Rock Sleyster, M. D., an address given by the president of the A.M.A. to the Woman's auxiliary convention in St. Louis, last May.

Mrs. V. M. Seron, Joliet, state recording secretary, gave a talk on Medical Legislation in which she outlined fully the work along this line in 42 states. She also stressed the work of the National Physicians committee, a topic which was formerly introduced by Mrs. Dooley.

Mrs. Harry Otten, councilor of the fifth district and state Legislative chairman was in charge of the regional program. Arrangements were in charge of Mrs. J. E. Reich and Mrs. C. B. Stuart.

Dear Auxiliary Members:

During the year 1939-1940, four new counties have been added to the State Auxiliary. There are now 24 local organizations of which 17 have Press and Publicity Chairmen. The activities have been announced with fair regularity.

One of the greatest responsibilities rests upon the shoulders of these county chairmen because it is through them, alone, that we may look for interesting facts concerning their functions and progress. Their positions were created for the express purpose of keeping the other 23 units, the officers of the State society and the National organizations informed of their individual activities and local interests. They are the ones who are looked to for expressions of and reactions to national auxiliary problems. This year one third of the counties co-operated, therefore, our work was one-third done. May we hope for a full 100% response during the next year.

It has been a privilege to serve in this small capacity during the past months and I am very grateful to Dr. Whalen, editor of the Illinois State Medical Journal, for publishing our material and also the chairmen of the eight counties for their splendid co-operation.

Mrs. C. W. Stuart,
Chairman, Press and Publicity.

SPEAKING OF SKULLS

Professor: "Here you see the skull of a chimpanzee, a very rare specimen. There are only two in the country—one is in the national museum and I have the other."

TABLES OF IDEAL WEIGHTS BASED ON THE WEIGHT AT 30 YEARS

Men		Women	
Height	Weight	Height	Weight
5 ft.	126 lbs.	4 ft. 8 in.	112 lbs.
5 ft. 1 in.	128 lbs.	4 ft. 9 in.	114 lbs.
5 ft. 2 in.	130 lbs.	4 ft. 10 in.	116 lbs.
5 ft. 3 in.	133 lbs.	4 ft. 11 in.	118 lbs.
5 ft. 4 in.	136 lbs.	5 ft.	120 lbs.
5 ft. 5 in.	140 lbs.	5 ft. 1 in.	122 lbs.
5 ft. 6 in.	144 lbs.	5 ft. 2 in.	124 lbs.
5 ft. 7 in.	148 lbs.	5 ft. 3 in.	127 lbs.
5 ft. 8 in.	152 lbs.	5 ft. 4 in.	131 lbs.
5 ft. 9 in.	156 lbs.	5 ft. 5 in.	134 lbs.
5 ft. 10 in.	161 lbs.	5 ft. 6 in.	138 lbs.
5 ft. 11 in.	166 lbs.	5 ft. 7 in.	142 lbs.
6 ft.	172 lbs.	5 ft. 8 in.	146 lbs.
6 ft. 1 in.	178 lbs.	5 ft. 9 in.	150 lbs.
6 ft. 2 in.	184 lbs.	5 ft. 10 in.	154 lbs.
6 ft. 3 in.	190 lbs.	5 ft. 11 in.	157 lbs.
6 ft. 5 in.	201 lbs.	6 ft.	161 lbs.

ORDERS!

Murphy, a new cavalry recruit, was given one of the worst horses in the troop.

"Remember," said the sergeant, "no one is allowed to dismount without orders."

Murphy was no sooner in the saddle than the horse kicked, and Murphy went over his head.

"Murphy," yelled the sergeant, when he discovered him lying breathless on the ground, "You dismounted!"

"I did."

"Did you have orders?"

"I did."

"From headquarters?"

"No, sir, from hindquarters."

IS THE HOME SAFER THAN THE AUTO OR STREET? 'TISN'T SO

People who fell, cut themselves, received shocks, were burned or were poisoned, or who otherwise came to grief in the "safety and security" of their homes were more numerous than those who met with automobile accidents, according to the National Safety Council. It seems unbelievable, but it is a fact, for during 1938 there were 32,000 people killed as a result of automobile accidents, a decline from the previous year; there were 32,500 persons killed as a result of accidents in the home, an increase. Falls and suffocation were the chief causes.

It is easy to see why the high number of home accidents is not so well known. It has to be a pretty spectacular occurrence—like slipping on a cake of soap and sailing through a window, to make the newspaper. Any motor accident receives much space.

Considerable attention is paid to the infection of children by tuberculous teachers but the question of the infection of children by domestic servants has received little attention. The prevention of first infection tuberculosis involves the examination of domestics in homes where there are children. Teschendorff, V., *Deut. Tuber. Blatt,* 1938 and *Bul. Hyg.,* June, 1939.

PRESIDENTS
ILLINOIS STATE MEDICAL SOCIETY



William Louis Baum, M. D.,
1908



Alfred C. Cotton, M. D., 1911

WILLIAM LOUIS BAUM

Dr. Baum was born May 11, 1867, in Morris, Illinois. After graduating from Jefferson Medical College, Philadelphia, he took postgraduate work at the Universities of Vienna and Berlin. He specialized in dermatology and urology. He was president of the staff at Cook County Hospital for nine years, and professor of skin and venereal diseases. He was a Fellow of the American College of Surgeons, member of the A. M. A., Chicago Pathological and Chicago Dermatological Societies, and belonged to many social clubs of Chicago. In 1908, he was president of the Illinois State Medical Society. Having received the commission of Lieutenant in the United States Army in 1911, Dr. Baum's record advanced him to the rank of Lieutenant Colonel in 1919. He died Feb. 21, 1932.

ALFRED CLEVELAND COTTON

Dr. Cotton was born May 18, 1847, in Griggsville, Illinois. As a soldier in the Civil War, graduate of Rush Medical College and professor in that institution, Dr. Cotton was for nearly forty years prominent in the professional life of Chicago. He specialized in diseases of children. During his lifetime he received many honors, as degree of Master of Arts from Illinois College and adjunct professor of materia medica and therapeutics in Rush Medical College. He was a delegate to the International Medical Congress at Moscow in 1897, at Madrid in 1903, and at London in 1913. Among his contributions to medical literature were "Diseases of Children" and "Care of the Infant." Dr. Cotton served as president of the Chicago Medical Society, the Illinois State Medical Society, American Pediatric Society and the Chicago Pediatric Society. He died in July, 1916.

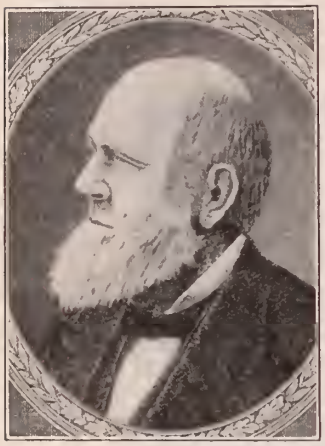


Col. Charles D. Center, M. D.
President-Elect 1933

CHARLES DEWEY CENTER

Charles Dewey Center was born July 8, 1869, on a farm near Ottawa, Illinois. He died of a skull fracture on March 31, 1934, three hours after having been struck by an automobile. Between those two statements lies a lifetime of energetic, useful and honorable achievement. Dr. Center received his degree of M. D. from Rush Medical School. He began his military career in 1905 by becoming assistant surgeon, Medical Corps, 5th Illinois Infantry. In 1910 he was made a captain and two years later a major. He saw duty at Ft. Benjamin Harrison and was transferred to field and became Lieutenant Colonel of Infantry, which position he held throughout the World War. He received many honors, in addition to being the president-elect of the Illinois State Medical Society in 1933. He was a Fellow A. M. A., Fellow of the American College of Surgeons, President of the Adams County Medical Society in 1925. For months prior to his tragic death, he had been working on plans for the interests of the society during his tenure of office as president, which he was to assume on May 17, 1934.

Illinois State Medical Society Secretaries



David Prince, M. D. 1840



Edwin G. Meek, M. D., 1850



Elias Cooper, M. D., 1852



H. A. Johnson, M. D., 1853-54 and 1857



E. Andrews, M. D., 1856



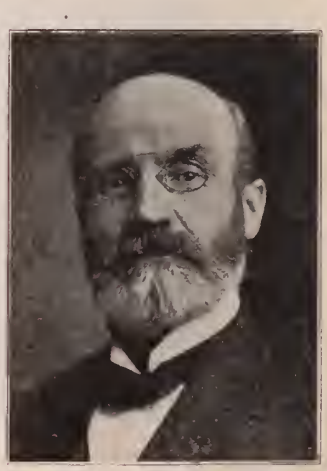
N. S. Davis, M. D., 1856 and 1858-68, 1876-80



T. D. Fitch, M. D., 1869-75



S. J. Jones, M. D., 1881-86



D. W. Graham, M. D., 1887-93

Illinois State Medical Society Secretaries



J. B. Hamilton, M. D., 1894-97



E. W. Weis, M. D., 1898-1913



W. H. Gilmore, M. D., 1914-22



William D. Chapman, M. D., 1923-24



Harold M. Camp, M. D., 1925-

A REAL CAMPAIGN AGAINST TUBERCULOSIS demands a genuine investigation carried out with general practitioners looking for patients in the community, in industry and in home-making. We are finding an appreciable amount of tuberculosis through testing campaigns in schools but it is not one-quarter of what we would find if the campaign were extended to the groups where tuberculosis is more prevalent.—Long, Esmond R., Phila., Tuber. Conf., 1939.

SURVIVAL OF THE UNFIT

Medicine has alleviated suffering and prolonged life, but it has, in so doing, also prolonged suffering and nullified the purging effects of natural selection. It has saved hundreds of thousands of debilitated organisms which are adding to the burden of society by reproducing more and worse offspring.—"The Wages of Biological Sin," The Atlantic Monthly.

THE LACK OF DECLINE IN THE MORTALITY FROM TUBERCULOSIS in young females seems to be due to increased generative and maternal activity. The task of protecting young women is a medical one and not to be solved by preventing pregnancies but by alleviating the dangers connected with child-bearing and by improving the external conditions during the hardest time in a woman's life. Vital statistics have a practical value if we discover the biological significance behind the figures.—Wolff, Geo., Amer. Jour. Hyg., Nov., 1939.

The industry displayed by Pasteur is well illustrated by the letter mentioned by Oliver, written in 1884 by Madame Pasteur to one of her children: "Your father is absorbed in his thoughts; talks little, sleeps little, rises at dawn and, in one word, continues the life I began with him this day thirty-five years ago."

HOPEFUL PANACEAS SLIP UNDER THE BIG EMERGENCY TENT WITHOUT CHALLENGE

Merle Thorpe, in *Nation's Business* under the heading "A Word for Honest Doubt," says:

Once a nation is persuaded that it is ill, receptivity to lay and professional diagnoses of its malaise become the rule and acceptance of novel treatments the fashion. Every theory of every man or woman who would do the world a good turn is actively promoted as a prescription for the public good. Customary vigilance and common sense go off duty. Hopeful panaceas slip under the big emergency tent, without challenge.

Now that the depression is history, and recovery is a current fact, sponsors of any amendment to the American way of life should be willing to walk up to the main entrance and show their credentials. Proof of every assertion should be forthcoming and a cautious rather than casual weighing of cost, human as well as money, should be made. Plans offered for national acceptance should be solid enough to withstand a wholesome skepticism articulated in the public interest. Those who plead for a change from this and that to that and this, on the ground that their measure has been successful in a foreign land, should bear the burden of proof. Advocacy of drastic institutional remodelings solely by the argument that the workable precedent has long been established in England, Germany, Sweden or Russia is a commonplace. A high official chided us recently for having been "a backward nation, 25 years behind Germany in social security." As more and more is heard in Washington of "extensions" to the Social Security Act, in the form of health insurance, the device of cross-examination might be usefully applied to this proposal:

Q—Is it or is it not a fact that sickness insurance in Germany has

(1) created a scandal in the large amount of funds used for administration?

(2) increased the number of sick days per year from 5½ to 28 (in England since compulsory health insurance from 9 to 12½), while in the United States the percentage has not increased over the same period?

Q—Is it or is it not a fact that state health insurance in Germany and England has shortened life expectancy, increased infant mortality, in striking contrast to the experience of the United States?

Q—Is it or is it not a fact that authentic studies show that in any comparison between compulsory health nations and the United States, on death rate, on diseases subject to human control, the odds are all in favor of the private medical practice here?

Q—Is it or is it not a fact that medical science has advanced more slowly, that medical practice has become more of drudgery in those countries which enjoy state medicine?

Q—Is it or is it not a fact that there is grave doubt that the investigations of personal life necessary to proper administration of health insurance by a political agency, while tolerated in Europe, would be resented here?

These questions are not captious. They are suggested by an editorial study of security measures abroad. They are submitted in a desire to get at the truth, to find the quickest and soundest way to bring greater protection for the individual against the vicissitudes of life.

Were a questioning state found directed toward similar measures which well-meaning protagonists would transplant from other countries, the consequences of their establishment here could be a matter of demonstrable expectation rather than progressive experimentation. The housing experience of the British government for example, the cooperative "successes" of England, Sweden and Denmark, the various forms of industrial control in Italy; price-fixing, state unemployment agencies, public works and "five year" plans in one country and another. All that's necessary today to get a nod of approval, it seems, is to lug in a foreign country as reference. To hold an honest skepticism, to insist upon details of practice abroad does not take the position that nothing good can come from an alien way of life. Rather, it approaches questions, which involve a fundamental change in the America of which we are only temporary trustees, with the same careful regard that the people give matters of fundamental personal concern.

SUDDEN THOUGHTS

A fool and his money sooner or later wind up in college.

A college education: Something that enables a man to get a job from a man who never went to school.

Said the math professor: "Now watch the blackboard while I run through it once more."

Someone has observed that it takes a student 20 minutes longer to say what he thinks than to tell what he knows.—Boulder.

The human brain is certainly a wonderful organ. It starts functioning the minute you get up, and never stops until you get in a quiz section.—Dodo.

Tuberculin testing of mental patients at the Peoria Hospital in Illinois disclosed the fact that 52% of the patients who were not in tuberculosis wards were positive to tuberculin and 23% showed definite evidence of pulmonary tuberculosis with an additional 11% who were classed as questionable. Among the schizophrenics, 23% had tuberculosis. In view of this incidence it would seem that tuberculin testing should become a routine procedure in admitting patients to mental disease hospitals and that positive reactors be X-rayed at regular intervals with particular attention to the dementia praecox group.—Pollak, M., and Turow, I. L., Conf. U. S. Vet. Adm. Phys., 1938.

It is a significant fact that although there has been a tremendous decline in mortality from tuberculosis, there is evidence that the risk of household contacts has not been appreciably reduced. As the disease declines it is apparently more and more concentrated in the immediate environment of the open case.—Doull, James A., *Amer. Rev. of Tuber.*, Dec., 1939.

Original Articles

THE RELATION OF THE ILLINOIS STATE MEDICAL SOCIETY TO ONE HUNDRED YEARS OF PROGRESS*

James H. Hutton, M. D.
CHICAGO

Introduction.

The Constitution of the Illinois State Medical Society requires that the president deliver an address at its annual meeting. As this is our centennial, I have tried to summarize some of the Society's important activities and to picture the part it has played in the development of Illinois.

It has been assumed — and the Transactions seem to prove—that the presidents' annual addresses reflected with tolerable accuracy the state and problems of the Society and for that reason they have been liberally quoted.

Transactions of the Society and other sources of medical history show that our members have been not only good doctors as measured by standards of the time in which they worked but also good citizens, teachers, preachers, editors, authors, geologists, botanists, and a very few left records as good business men.

At some annual meetings the Society transacted a large amount of very important business. Other years the meetings were taken up with routine matters of little significance except to the doctors immediately concerned.

Until the Illinois Medical Journal was founded in 1899, the transactions of each annual meeting were published in a bound volume.

The membership of the Society was small in the early years and represented but a small percentage of the doctors in the State. There have been various classes of members—members, permanent members, life members, members by invitation and the emeritus members of recent years. For many years delegates were elected to neighboring state societies as well as to the American Medical Association.

The problems faced by the profession have been curiously alike throughout the Society's lifetime. Its administrative organization has been changed from time to time as the need for emphasis has shifted from one front to another. Before the establishment of the Board of Health, now the Department of Public Health, and for some years afterward, the Committee on Practical Medicine, which was a standing committee up to about 1890, discharged some of the duties now carried on by that organization. Its duty was to "prepare an annual report on the more important improvement effected in this State in the management of individual disease, and on the progress of epidemics, referring as occasion requires to medical topography and to the character of prevailing diseases in special localities, during the term of their service." (Constitution.)

We should remember that up to a little more than half a century ago the cause of many diseases was unknown, fevers could not be differentiated, serum and vaccine therapy had not been developed. Early doctors were careful clinical observers, noting not only the patient and his symptoms and reaction to medication but also his environment as to geography, topography, sanitation and meteorological conditions. They reported to the Committee on Practical Medicine the procedures and prescriptions which they had found helpful, thus forming a common fund of knowledge from which all medical men might draw as needed. This was the same spirit that animates research workers today in making their valuable discoveries widely available as soon as their worth has been proved. In commenting on remedies and procedures once considered valuable but now superseded by something better, these things are cited not in any spirit of derision but to emphasize the great handicaps under which these men worked.

Conditions in the early years. The story of the Illinois State Medical Society begins in 1840. To understand the courage of men who founded it, we must visualize the general conditions of that time. The State had a population of 500,000—it now has three times that many on relief—and only three years before had seen its last Indians across the Mississippi or up into the Wisconsin reservations. Chicago as a city was only three years old. As late as 1834 peddlers sold drinking water in its streets at five and ten cents a barrel. But Chicago then as now was a very progressive city and so in 1813 it passed an ordinance forbidding hogs to run lose in the streets. Charles Dickens referred to Cairo as a "hideous swamp." Peoria had a population of

*President's address.

1,467 and Dr. Rudolphus Rouse was president of the town board of trustees. The village had no paved streets, no distillery and only one brewery. It was connected with Galena, Oquawka, Rushville, Springfield and Chicago by stagecoach. The trip from Peoria to Chicago required two or three days. Food and supplies were brought to Peoria by the river boats so that when the Illinois River was too low for navigation or frozen over in the winter the inhabitants were on short rations except for corn, pork, and foodstuffs produced in the surrounding countryside.

On February 10, 1840, Abraham Lincoln attended a Whig "Festival" in Peoria, at which Dr. Joseph C. Frye, later one of the founders of the Peoria City Medical Society, was a vice-president. Slave catchers were operating in the town that year. Prostitution and shooting in the public streets had been forbidden by an ordinance of 1838.

Roads were scarcely more than trails and much traveling was done by water so that with the close of navigation in winter attendance at medical meetings was smaller than in summer. There were no telegraphs, telephones, electric lights or mechanical refrigeration. The only railroad in the State was a stretch from Jacksonville to Meredosia known as the Northern Cross. It had wooden rails strapped with iron. The ends were bevelled which made them sharp. They often curled up and penetrated the car and were known as "snake heads." The first engine and train to move on rails in Illinois ran over this line in 1838 but it was so unsatisfactory that the engine was finally sold and mules were used as motive power. The first steam train over a private road ran from Halsted street in Chicago to the Des Plaines River in 1848.

A consultation between doctors was apt to require the best part of a day if the patient lived outside of town. Communication was no faster than transportation, which was at the speed of the stagecoach or a man on horseback. Now communication travels almost with the speed of light and one may now travel from Chicago to London in less time than it then took to go from Chicago to St. Louis. Recently Dr. Lahey, our Orator in Surgery, talked to the family of a patient in Honolulu, a brother in Pennsylvania and a second doctor in California, who after the consultation caught the China Clipper and was ready to operate on the patient in Queens Hospital in Honolulu the next morning.

The State of Illinois was one vast reservoir of malaria, which was partly responsible for its reputation as an unhealthful spot. Cholera epidemics swept various parts of the state a number of times. The epidemic of 1849 was brought to Chicago by the Steamer John Drew, which came from New Orleans by the way of the Mississippi and Illinois rivers and the Illinois and Michigan Canal. The captain died of cholera a few hours after his boat arrived. Cholera caused intense suffering and killed a high percentage of those attacked. A man might be in apparent good health one day and dead the next. It last visited Chicago in 1877. Yellow fever was greatly dreaded and in 1878 actually invaded Cairo causing 62 deaths in 100 cases.

Diarrheal diseases took hundreds of lives every year. Ten per cent. or more of mothers died in childbirth and even up to 1879 fifty per cent. of children died before their fifth year. In 1873 Dr. N. S. Davis, who for forty years fought for better public health facilities, told this Society that in Norway the deaths of children under five years of age were only 15 per cent. of the total deaths; in Massachusetts 20 per cent., in Bavaria 50 per cent. It would be interesting to know, he thought, whether Illinois was in the class with Norway or with that of Bavaria. In all probability it was nearer Bavaria than Norway, but there is no way of knowing since at that time Illinois was not keeping books in terms of vital statistics. But Chicago was and the figures are available for comparison. In 1873, the year in which Dr. Davis made the slighting reference to Bavaria, the proportion in Chicago was 59.3, in Bavaria 50. Had the maternal, infant and general mortality rates of that period prevailed to this time, those of you who have children would have seen half of them die and this audience would be much smaller than it is because many of you would be in the cemetery. Had the mortality rates of earlier years prevailed through 1938 Chicago alone would have lost 60,000 people instead of 30,000.

Smallpox occurred in epidemics in all parts of the state.

Diphtheria killed half of its victims. Often all the children in a family would be wiped out

in a single epidemic. In 1939 seventy counties in Illinois had no death from diphtheria.

At the beginning of the 19th century the United States had one asylum for the insane—it was located in Virginia. Forty years later there were eight institutions in America where the mentally ill could receive care, but few of them were institutions supported by state funds. More of the mentally ill, if violent, were locked in barns, sheds, jails, or county poor farms. Elsewhere, if not in Illinois, they were treated as a zoo and admission was charged for the privilege of watching them. If they were harmless, they were sometimes auctioned off to the bidder who would take the smallest sum for their care or turned loose on country roads to become tramps.

The doctor called to the sick bed had to depend for diagnosis on his unaided senses. He had no thermometer (this came into general use about 1879; it was about ten inches long and required at least five minutes to register the axillary temperature), no stethoscope, no instrument for measuring blood pressure, no blood count or blood chemistry determinations, no urinalysis, no x-ray, no way of examining the interior of any organ. Nearly all of those aids to diagnosis have come about in the last fifty years. As a matter of fact, there has been more progress in correct diagnosis and effective treatment of disease since 1880 than in all previously recorded history.

The State exerted no control over medical practice. Whoever felt the "call" to be a doctor simply hung out his shingle and waited for victims. A medical practice act was passed by the territorial general assembly in 1817 when Dr. George Fisher of Kaskaskia was speaker of the house. Dr. George Cadwell championed the law of 1819 entitled "An Act for the Establishment of Medical Societies." Another medical practice act, sponsored by Dr. Conrad Will, was passed in 1825. These laws were repealed by the next legislature succeeding their enactment.

Organization and activities of the Society. In spite of these tremendous handicaps a number of physicians met in Springfield June 9, 1840, to make preliminary arrangements for the organization of a state medical society. Twelve men from widely separated parts of the state were appointed a committee of correspondence, whose duty it was to arrange for a convention to be held in Springfield the following December. The call for the convention issued by this committee was carried by the *Illinois State Journal* June 19, 1940. It proposed ". . . digesting a plan that shall be calculated in its legitimate operations to benefit the people, instruct the unlearned, inform ourselves and elevate the entire profession above all mercenary considerations to a state of superior mental, moral and medical excellence." In short, they were striving to lay the foundation for our Educational, Scientific Service and Postgraduate Committees of today.

While the records of that December meeting cannot be found, Zeuch says the organization was effected and that it transacted important business. Dr. John Todd, an uncle of Mrs. Abraham Lincoln, was president and Dr. C. F. Hughes, secretary. Dr. Francis McNeill succeeded Dr. Hughes in 1841 and presumably remained in office till 1847. December 16, 1847, the Illinois State Medical Society met in Springfield and again elected Dr. Todd president and Dr. David Prince secretary. Dr. Edward Mead, of St. Charles, made a report on medical education and delegates were elected to the National Medical Convention. The evidence is conclusive that Dr. Todd was president from 1840 to 1850.

In June 1850 in the State Library Room at Springfield a convention presided over by Dr. Rudolphus Rouse, as chairman, reorganized the Society on its present basis. Accounts differ as to the number present, but Robert Boal, who was one of them and one of the two survivors in 1882, said that there were twelve.

On motion of Dr. Boal, at the afternoon session of June 5, 1850, it was resolved that a special committee of three be appointed by the chair to memorialize the legislature at its next session praying the enactment of a statute providing for registration of births, deaths and marriages. Ten years later they were still trying to get this done.

The lack of rapid transportation and ready communication was partly responsible for the slow growth of the Society over the early years as indicated by Dr. Whalen's summary of its history in the centennial number of the JOURNAL.

At the Chicago meeting in 1853 Dr. Samuel Thompson presented a paper on the uses of turpentine. A review of the literature, he said, indicated that it was useful in iritis, typhoid

pneumonia, amaurosis, taenia, hemorrhage from mucous membranes, dysentery, colic, congested and distended state of the rectum, and ulcer. Dr. Thomas Hall of Starck County reported that rheumatism was a far more common disease than formerly in that district and was increasing in a far greater ratio than the increase in population.

In 1854 Dr. Daniel Brainard made snake bite the subject of his presidential address.

At Bloomington in 1855 a report of the treasurer showed the society still indebted to Dr. N. S. Davis in the amount of $56.

Dr. C. N. Andrews referred to the lack of appreciation of men by their neighbors. As an example, he noted that Dr. Brainard some months before had given the Paris Academy of Sciences some lessons in the treatment of poisoned wounds and said the address seemed to be well received there but on this side could hardly be credited. It was believed that there was some mistake in the names and so when it was reported here his name was mutilated into a French "M. Benard."

In the *North Western Medical Journal* for April 1855 Dr. N. S. Davis referred to the unusual prevalence of smallpox and the rapidity of its spread. He considered it could not be accounted for by direct contagion but must be aided by an epidemic condition of the atmosphere.

In 1856, in his president's address, Dr. N. S. Davis gave a brief review of the influence alcoholic liquids were capable of exerting either in preventing or curing tuberculosis. He mentioned various writers who claimed beneficial effects, but did not agree with them. Dr. Haller, of Vandalia, said that that season he had not bled a single case of pneumonia of any kind but had used tartar emetic freely and there had been less fatality than usual.

In 1857 Dr. H. Noble dealt with medical progress. Dr. Haller's treatment of typhoid pneumonia was reported as very successful. It consisted of quinine, calomel, antimony, morphine and counter irritants. Out of upwards of thirty cases there was not one fatality.

At the Rockford meeting in 1858 the Society appointed a committee to mature a plan for memorializing the legislature in favor of legalizing dissection.

At the Decatur meeting in 1859 the Society disapproved the fact that the president of the American Medical Association was always picked from the profession of the city where the meeting was convened, it being held that all officers should be chosen on merit basis. A resolution was passed to try to do something to change this custom.

In Paris, in 1860, another petition was made to the General Assembly regarding a law for the registration of births, marriages and deaths. In 1867 it ordered a committee to work for the passage of an act along the lines of modern workmen's compensation laws. In 1874 Dr. J. H. Hollister, of Chicago, moved the appointment of a committee by the president to memorialize the legislature for an appropriation to establish an institution in the state for the better and more humane care of feeble-minded children. Those appointed were Drs. L. P. Pierce, E. P. Cook, of Mendota, and J. L. White, of Bloomington. The institution at Lincoln came about partly as a result of this action.

In 1876 the Society met in Urbana in a Hall of the Industrial University (now the University of Illinois. The treasurer, Dr. John H. Hollister, reported an indebtedness of $118.46.

Dr. T. D. Washburn, of Hillsborough, thought medicine in a bad way and was aggrieved that the public was so easily deluded by irregular and poorly educated practitioners. He thought homeopaths and eclectics were the worst of the lot. Dr. Massie, of Paris, read the report of the Committee on Practical Medicine. Particularly interesting are the prescriptions reported of special value in the treatment of infections, the cause of which had not yet been discovered and for the treatment of which no specific was available.

Dr. W. L. Goodell, of Effingham, stated that in a case of congestive chill, where the patient, a young man, was supposed to be dead by the friends, he administered "in one hour and fifteen minutes three tablespoonfuls of quinine, one teaspoonful of capsicum, two tablespoonfuls of black pepper, and one-half pint of whiskey. After which he sweat as never man sweat before. But his right arm and left leg remained icy cold for three days. He made a good recovery."

Evidently the value of bleeding was beginning to be doubted, and the chairman had asked several members their opinion as to the indications for and value of it. Most men were still using

it. Dr. N. S. Davis said "It is generally beneficial in the first, or congestive stage of acute inflammations in the more vascular structures."

Dr. E. W. Gray, of Bloomington, estimated that preventable disease cost the people of Illinois $120,000,000 annually.

On motion of Dr. S. H. Birney, of Urbana, the Society appointed a committee to memorialize the next legislature on the subject of the appointment of a State Board of Health and suggested that with proper modifications, the act by which the Board of Health of Massachusetts was inaugurated be submitted to the same as a basis for the Illinois State Board.

Dr. Sarah Hackett Stevenson read a paper on Progress in Physiology, the first to be given before the Society by a woman. The same year she was the first woman delegate to the National Medical Association.

Dr. N. S. Davis made a report on the progress of medical education in the United States. This was published by the National Bureau of Education and was an epoch-making factor in raising the standard of medical education.

Dr. S. H. Birney announced that the meeting would adjourn promptly at noon so that members might reach the horse cars which would be waiting near the University Hall.

In 1878 the annual dues were three dollars and delinquents were carried three years. Of the Society's 374 members thirty-one were elected delegates to the American Medical Association.

Dr. N. S. Davis complained of drug stores somewhat as we do today. He said: "There is no reason why the business of filling the prescriptions of physicians should be connected with the traffic in paints, oils, dye-stuffs, toilet articles, fancy goods and cigars than with other dry goods and groceries."

Dr. B. M. Griffith, of Springfield, chairman of the Committee on Arrangements, in his address of welcome said: "The political economy of this country is passing through a critical financial trial, and parties, political and otherwise, are shaping their lines to secure the best results from the changes. It yet remains to be seen whether the silver bill, the issue of four per cent. bonds, economy in government expenditures, the European war, and a rigid reform in the civil service, will be the efficient panacea so much desired to secure prosperity to our people."

At Lincoln in 1879 Dr. E. P. Cook made the following interesting statements: "Seriously, we regard the work thus far done by the State Board of Health as having accomplished more in the direction of medical education in our State than could have been done by any other means in the same or much longer time.

"No other state in the world requires this unfortunate class of sufferers (insane) to be dragged before a court, like common criminals . . . before they can gain admission to an institution.

"But we refer chiefly to the duty of the medical profession in relation to such legislation as is needed to advance sanitary interests in the widest sense and affecting to a greater or less degree every member of the body politic; and that in no way can be construed into the desire to especially advance or protect any professional interest that is not involved in the interests of the whole. To the honor of the profession of this State, it can be said that we have never desired or endeavored to obtain legislation that as a fact could be construed into special protection." This policy has never yet been changed.

Dr. G. W. Jones, of Danville, mentioned that there was much maudlin excitement during the year over the abstraction of a few bodies from family cemetery lots. There was a reaction, he believed, in favor of the profession.

At the Chicago meeting of 1881 thirty-six delegates were appointed to the American Medical Association, and a legislative committee was established as a standing committee.

Dr. J. G. Zeller thought that about 100 young people had died of diphtheria in the west side of Woodford County. Dr. Edmund Andrews, of Chicago, reported on the use of chian turpentine, mastic and sulfur in the treatment of cancer. A year before Professor Clay of Manchester, England, published in the *London Lancet* some cases of cancer nearly cured by the internal use of chian turpentine and flowers of sulfur. His experiments took a profound hold upon the profession and the public so that this form of turpentine six months before had sold for four times its weight in silver. Dr. Andrews' conclusions were that every cancer in a proper location should be cut out early and the remedy taken afterwards and that old, neglected cases where an operation is hopeless, are the only ones which should trust the new remedy exclusively.

Even in those days the increasing speed of transportation was influencing health and disease. Dr. Washington West, of Belleville, remarked: "We go from New York to San Francisco in from four to six days—formerly in from four to six months; this annihilation of time and distance makes the diseases of one city virtually those of the other, and in fact, of the whole intervening country."

In 1882 the Society, which had 417 members, met in Quincy and elected thirty-nine delegates to the American Medical Association. Dr. Robert Boal, the president, had been in practice over fifty years. He devoted part of his address to a comparison of the ease of practice and the pleasant life of the physician of that time as contrasted with that of fifty years before and thought the doctor was losing prestige with the public. He said: "Where is the physician of the present day who would have the temerity to repeatedly bleed a patient *ad deliquium animi* and keep him nauseated for days upon tartar emetic to cut short a case of pneumonia or pleuritis?" He remarked that Illinois was "afflicted with a swarm of medical colleges" and suggested regulating them.

In discussing the practice of early years he told the following story:

"What was required for the outfit of a physician of that day and his mode of practice, is well illustrated by a story told by one of the early presidents of this Society, the late Dr. Rouse. On his arrival in the then small village of Peoria he was warmly welcomed by the only physician there. He observed that the resident doctor had a large pair of saddle-bags stuffed tolerably full, his curiosity was excited to know their contents, and upon asking the doctor what they contained, he readily opened them, and disclosed an old spring lancet, three or four pounds of epsom salts, a pound or more of calomel, a similar quantity of nitrate of potash, and from one-quarter to a half-pound of tartar emetic.

"As Dr. Rouse was a stranger, and was supposed to be unacquainted with the practice in a new country, he kindly undertook to instruct him. He informed him that sometimes when called to see a patient, if he was plethoric, he bled him, and gave a large dose of calomel, followed by epsom salts. At other times, on first seeing the case, if the tongue was coated and nausea was present, he gave an emetic of tartrate of antimony, followed in due time by the calomel and salts. If the stomach and bowels had been thoroughly evacuated, he then gave nitrate of potash and antimony in small and repeated doses, interjecting between them moderate doses of calomel. Then turning to his listener, he said in the most serious manner, "So you perceive, doctor, it is necessary to vary our practice in this new country."

Dr. Boal said that a portion of the stock in trade of Thomsonians consisted in denunciation of the "mineral and calomy doctors."

In 1884 the Society met in Chicago and elected forty-five delegates to the American Medical Association. Dr. Henry Gradle presented the first discussion on the bacterial cause of disease. According to the State Board of Health 78 physicians died in 1882-1883 at the average age of 52 years. Of all the deaths in the State in 1882-1883 the cause was given in only 22 cases, the highest number (5) from pneumonia and the next highest number from overdose of morphia.

In 1886 J. J. M. Angear, of Chicago sharply criticized Pasteur and accused him of having failed to acquaint himself with previous work and of rushing into print too quickly. He closed by deciding that there was something in his practice if not in his theory.

In 1887 the Society met in Chicago and elected forty-one of its 360 members delegates to the American Medical Association. Dr. Elias Wenger said: "The great amount of sickness in the country induced the migration thither of a multitude of adventurous quacks and pretenders, practicing under the various titles of Homeopaths, Hydropaths, Botanics, Eclectics, Unsoephists, Snappers and Spiritualists. Their qualifications consisted of a compound of ignorance and impudence."

At the meeting in 1890 Dr. Norman Bridge in his address of welcome said Chicago had an aggregate of probably 2,000 hospital beds and that many of the hospitals were managed very well. He mentioned the large number of medical schools but thought he had better leave Dr. Rauch to say what sort of work they were doing. The city had no worthy laboratories for original research nor any comprehensive medical library. The trustees of the Newberry Library were at that time developing plans for a medical library.

The Chicago meeting of 1893 had an attend-

ance of 450. In previous years it had been about 250. The entire expense of the meeting was $175. From the exhibitors they received $144.25, leaving $30.75 to be paid out of the treasury. The State Board of Health was still granting licenses to men who failed to pass their college examinations.

Dr. J. B. Maxwell, of Mount Carmel, read a paper entitled "State Care of Epileptics." His object was to arouse the profession to have something done along that line. The following year the Society endorsed a scheme for an epileptic colony.

Dr. Anne Hazen McFarland, of Jacksonville, discussed "The Lunacy Law of Illinois." Several laws regarding lunatics were enacted between 1823 and 1867. She said "In 1874 the present defective law went into operation pronouncing insanity a crime and banishing from society every one so afflicted. . . . The person is arrested, accused of insanity, placed upon trial and convicted the same as he would be for grand larceny."

In 1893 Dr. E. Fletcher Ingals in his president's address said: "In the past this Society has stood for good government, and the interests of the unfortunate, on all questions pertaining to our hospitals, the asylums for the insane and feeble-minded, the school for the deaf and dumb, and all other public charities. Our work in this direction has often ended in disappointment, but our sympathies have not grown cold, and despite reverses our efforts have been continued.

"After twenty-four years of labor in the interest of one of the most vital questions regarding the welfare of the insane it was thought a few weeks ago that we would this year surely secure a change in the barbarous laws for their commitment that would relieve this unfortunate class from the treatment accorded common criminals to which they are now subjected, while at the same time the revised law would carefully protect their rights as citizens.

"The law, however, has not yet been passed, and it is probable that it will not be at this session of the legislature."

J. J. N. Angear of Chicago read a paper entitled "Consumption Primarily a Nerve Disease," in which he said: "Since the introduction of the theory of the microbes causing phthisis, the profession have been spending their energy in trying to kill the bacilli, believing when that can be done the disease will be cured." (He was referring to a treatment of tuberculosis by rectal installation of sulphuretted hydrogen which had been paraded before the society at one time.) "Hence the intestines have been the battle ground, and the microbes have been bombarded with sulphuretted hydrogen. . . . Where are those doctors and their stink pots? The microbes echo, where!"

Dr. Fletcher Ingals suggested that the public be educated in matters affecting their health by circulars distributed through doctors' offices. This idea was studied for a year by a committee composed of Dr. Ingals, Dr. W. E. Guthrie, of Bloomington, and Dr. Sanger Brown, of Chicago.

At the meeting in 1894 this committee recommended that the work of educating the public in matters of health, the avoidance of disease and habit-forming drugs, particularly cocaine, be carried on through a permanent committee. Dr. William E. Quine opposed this and suggested that the Society's committee should cooperate with the Board of Health which should actually carry on the instruction. Dr. Quine's idea prevailed.

Dr. William O. Ensign, of Rutland, was chairman of a committee that was to have completed a report on the history of the Illinois State Medical Society for the meeting in 1894. His illness prevented the performance of this work.

At the East St. Louis meeting of 1897 President A. E. Corr, of Carlinville, said that the Society had placed on the statutes of Illinois laws creating an Institution for the Feebleminded, a State Board of Health and the regulation of the practice of medicine: one legalizing the procuring of material for dissections, called the Anatomy Act; and after twenty years of close vigilance, secured a change in the inhuman laws for the commitment of the insane; also a law tending to prevent a great deal of blindness; and was then engaged in an effort to secure a law creating a State Board of Examiners for applicants to practice medicine in the State so as to make the State Board of Health much more efficient for sanitary purposes and, he thought, would soon procure the passage of a law creating an Epileptic Colony.

Dr. Charles B. Johnson, of Champaign, said the idea of the state vaccine laboratory had its origin in the Illinois State Medical Society.

The idea of educating the public in health matters persisted and in 1903 the Chicago Medical Society began a series of public health lectures. In 1922, as most of you know, the Lay Education Committee was founded, now known as the Educational Committee. During the first two years of the committee's existence it was supported by voluntary contributions from the profession, but since that time it has spent $12,000 annually of the Society's money. All of this money has been spent either on health education for the public or in improving the quality of medical care rendered to the public.

Activities and influence of some individual members. These extracts from the Society's official proceedings show that as an organization it has sponsored and struggled to secure the enactment of laws to protect and promote health, to elevate the quality of medical care and to secure better and more humane care for the unfortunate wards of the State. The doctor as an individual has by no means limited his interest and efforts to medicine. He has been active in improving the educational facilities of the State, in promoting religious organizations, in literature, politics and even diplomacy. As successful business men the doctors have left few records.

I shall not attempt to describe except very briefly the part played by such men as Brainard, Fenger, Senn, Murphy, Billings, Davis and Ochsner. In the first place, their achievements are so great most of you are already familiar with them. In the second place, they belong almost as much to the nation as to Illinois. Finally, Dr. Pusey has recently described much more ably than I could the part they played in Chicago's development. I want to call your attention to men not so well known but who nevertheless played worthy and important parts in the development of their communities and to show that medical men all over the state have been influential in developing schools, churches, newspapers and a worthwhile community life. The list included here is by no means complete and doubtless men just as distinguished as those here mentioned are not included.

Dr. Silas Hamilton practiced near Natchez, Mississippi, before moving to Monroe County in 1830. He owned twenty-eight slaves whom he probably brought with him and freed during his lifetime. Dr. Hamilton served both as physician and clergyman. At his death he left a will which read as follows:

"Believing in the very great importance of primary schools, and desiring that my friends and relations in this neighborhood should receive the benefit of them, I give and bequeath $4,000 for the establishment of a primary school, viz: $2,000 to be appropriated to the erection of a building suitable for a school, and for a place of public worship; and $2,000 to constitute a fund for the support of a teacher."

At Otterville there is a monument erected to his memory by George Washington, one of the slaves he freed.

Dr. Rudolphus Rouse came to Peoria in 1831. He was the first president of the village board of trustees in 1835 and except for one year served continuously until city government was adopted. In 1838 there was a field of twenty candidates with nine trustees to be elected. Dr. Rouse received 127 out of 128 votes cast.

In the rear of his home he built a fine opera house where some of the foremost actors of the time appeared, because it furnished a break in the long travel between Chicago and St. Louis.

He was one of the founders of the Peoria City Medical Society in 1848, chairman of the Convention which reorganized the state society in 1850, and president of the Illinois State Medical Society in 1852.

He conceived, had sculptured and supervised the erection of a monument to the memory of himself and his family.

Dr. William Fithian was the first white child born in Cincinnati. At the time of his graduation, as was the custom in Ohio, he was made an associate justice sitting with the county judge. About 1830 he came to Danville, then a village of 200 or 300 people. He had a very large practice which extended from McLean County over into Indiana and from Iroquois to Edgar County. He was also very active in public life. He was a representative in the Ninth Assembly where Lincoln was serving his first term. He was in the State Senate from 1834 to 1838, a period of wild government spending somewhat resembling our own time. Dr. Fithian was opposed to these extravagant appropriations which were for canal and railroad building. $1,800,000 was appropriated for the Northern Cross Railroad which was to extend from Quincy to the Indiana state line. When

Dr. Fithian found he could not defeat these appropriations, he made the most of a bad situation and arranged to have that part of it running through his county built first. This took much of the appropriation. When the crash came work was abandoned for fifteen years. When it was resumed it was found that the work had been so well done it could not be abandoned and so the Wabash, which incorporated part of the Northern Cross, ran through Danville instead of following a more direct route. Dr. Fithian was a presidential elector in 1856 and took an active and influential part in the campaign of 1860 which resulted in the election of his very good friend Mr. Lincoln.

Edmund S. Kimberly came to Chicago in 1832 and immediately became interested in civic affairs, acting as clerk at the election which decided that the village should be incorporated in 1833. The same year he was elected a member of its board of trustees. As a leader in the convention in Peoria in 1844 he helped to put the public school system in effect. Three years later he championed the movement for township organizations in the state. Other offices he filled were recorder of deeds, clerk of the county, school inspector, and president of the school board.

Dr. Daniel Brainard, the founder of Rush Medical College, rode into Chicago on a shaggy Indian pony in September, 1835. He went to the law office of his old friend John Dean Caton and sought counsel as to the advisability of locating in Chicago. The lawyer advised him to sell the pony to the Pottawatomies and invest the proceeds in a desk, a shingle and an announcement in the *Democrat.* Caton gave him office space.

Dr. Brainard secured a charter for Rush in the winter of 1836-1837 a few days before the legislature granted a charter to the City of Chicago. Because of the panic of 1837 the first annual announcement was not issued until October, 1843.

Dr. Brainard was a great organizer and one of the best surgeons of his time. He was well known in Europe, particularly France, where he was made a member of some of their most exclusive scientific societies.

In addition to his professional activities he found time to run a paper. He preceded John Wentworth as editor of the *Chicago Democrat.* He also initiated publication of the first medical journal in Chicago, the predecessor of the *Medical Journal and Examiner.*

October 9, 1866, he gave his class some instructions about how to avoid cholera. That evening he began to write a paper on the subject. Only the first page was finished when he was stricken with the disease and died the next afternoon.

John Nevins Hyde said of him: "Brainard was a botanist, a geologist, excelled in literature and, above all, had the sixteenth century distinction of possessing the qualifications of a good surgeon, 'the eye of a hawk, the hand of a woman and the heart of a lion.'"

The Illinois State Medical Society was one of the first state societies to admit women to membership. Women physicians now constitute about ten per cent of our membership. The hardships of the early women physicians are illustrated by the experience of Dr. Margaret Logsdon, who lived on a farm at Sandy Ridge just below Shawneetown. She had a large obstetrical practice on both sides of the Ohio. Her house was close to the river and when Kentucky patients needed her they called across the river, she answered "coming," got in her skiff and paddled across the river. One night a prospective Kentucky father called her, she answered as usual, but arriving at the river, found her skiff gone. She wasted no time looking for her boat or trying to get another, but finding at the water's edge a log which had a branch on it, Dr. Logsdon took off her dress, tied it high up on the branch, then pushed the log before her and swam the Ohio River. Arriving on the Kentucky side, she put on her dry clothes and delivered the baby.

Dr. E. R. Roe was an early resident of Shawneetown, arriving in 1843, and for ten years he was a practitioner. Journalism at first was an avocation but later occupied all of his time. Because of his literary ability his writings were sought by the press of his day and the *Illinois Journal* of Springfield employed him as a regular correspondent. Dr. Roe edited the *Jacksonville Journal,* then the *Constitutionalist.* In the late 1880's he became editor of the *Bloomington Pantagraph.* He wrote "Virginia Rose; A Tale of Illinois in Early Days," as a prize serial in the *Alton Courier,* 1852. He had prepared this story while practicing medicine in

Shawneetown and used as its background the lawlessness of Cave-in-Rock. He wrote a number of other books. In 1876 he was elected to the Twenty-Seventh General Assembly.

Edmund Andrews, one of the founders of Northwestern University Medical School and for half a century chief surgeon for Mercy Hospital, was a geologist of repute.

Herman L. Victor Schroeder was for half a century after 1851 a notable citizen of Bloomington. He bought from the Illinois Central eighty acres where the City of Gilman now stands, laid it out in town lots and called it Schroedersville. He was probably the first man in the west to successfully raise vineyards on any important scale. Millions of his plants were sold throughout the United States and some were shipped abroad. To him the people of Illinois are largely indebted for the first practical measures toward coal mining. He engaged experts who found coal and thereupon organized the Bloomington Coal Mine of which he was twice president and in which he once owned nearly one-fifth of the stock.

I am indebted to Dr. B. E. Montgomery for data concerning men about Quincy.

Dr. Daniel Stahl, of Quincy, perhaps typified more accurately than any other the pioneer Illinois doctor's conception of patriotism seventy-five years ago. He was born in Gilserberg, Germany. He was a member of the convention that reorganized the Illinois State Medical Society in 1850. Dr. Stahl enlisted May 1, 1861 with the Union Army, served five years and retired a brevet lieutenant-colonel. His last four years of life were spent abroad because of ill health. When he died at Baden-Baden, October 26, 1874, farewell instructions to his children were: "The period during which I served in the army of the United States being the proudest of my life, I wish to preserve as heirlooms in the family my commissions and my sash." He is buried in the Protestant Episcopal cemetery of Baden-Baden beneath a plain white slab inscribed:

Daniel Stahl, M. D.
Late Brevet Lieutenant-Colonel
and Surgeon, U. S. V.

Dr. Edward G. Castle served a consul at his old home, Carlisle, England.

Dr. Francis Drude came to Quincy from Germany in 1848. He reorganized the board of health of Quincy in 1869 and served as its registrar and chief officer without any or but nominal pay for twenty years. Quincy's complete statistics antedating the State Department of Public Health are largely due to his efforts.

Dr. Joseph N. Ralston was one of the founders and first president of the Adams County Society. He was organizer and first president of the public school district and of Quincy College, a Methodist school.

When John Evans graduated from the Ohio Medical College at Cincinnati in 1838 his father gave him a pony, saddle, bridle and ten dollars. He began practice in Ottawa, returned to Ohio and finally located at Attica, Indiana. For ten years he worked to secure Indiana's first insane hospital, which he planned and later superintended. Dr. Brainard persuaded him to join the faculty of Rush Medical College as Professor of Obstetrics.

His father then advanced money which he invested in Chicago real estate so judiciously that it became the foundation for a fortune.

In 1850 he helped organize the Chicago Medical Society and to reorganize the Illinois State Medical Society, and the same year was one of the editors of the *North Western Medical and Surgical Journal*, the first medical publication in Chicago.

As a member of the City Council Dr. Evans prepared an ordinance providing for a superintendent of public schools, and it was largely through his influence that Chicago's first high school was built.

With Dr. Brainard he built the Evans Block on the east side of Clark Street just opposite the present Sherman Hotel.

From 1853-1855 his energies were devoted to the founding of Northwestern University. He secured for it valuable land, endowed it to the extent of $100,000 and had it permanently exempted from taxation. To commemorate his service the site upon which the university was erected was named Evanston and its Davis Street for his good friend N. S. Davis.

He aided in the establishment of Mercy Hospital, the Methodist Book Concern and the *North Western Christian Advocate.*

His greatest financial effort was raising funds for the building of the Chicago and Fort Wayne Railroad, which is now part of the Pennsylvania.

He was a member of the convention that nominated Abraham Lincoln for the presidency

and in 1862 Lincoln appointed him Territorial Governor of Colorado. During the next thirty-five years he took a large part in the building of railroads and the development of Colorado's resources. Mount Evans was named for him by act of the Colorado legislature. He had a large part in creating Colorado Seminary, which later became the University of Denver. In addition he gave it land and more than $150,000.

Within the last eight years of his life he constructed in Denver one of the most perfect systems of electric railways in the country.

Dr. Calvin Truesdale, for half a century a prominent practitioner in Rock Island, was a member of the first class and attended the first course of lectures delivered at Cleveland (Ohio) Medical College and was graduated from that school. He came to Rock Island in 1854 and took a great interest in public affairs. He was a member of the Illinois constitutional convention of 1870 which gave us our present organic law. His good friend, President Lincoln, appointed him postmaster of Rock Island and twice he was elected mayor.

Dr. Robert Roskoten was born near Dusseldorf on the Rhine. He was involved in the student rebellion of 1848 and barely escaped to this country where he arrived in 1850. President Lincoln appointed him to the army board of examiners and he soon rose to the rank of brigade surgeon. He was seriously wounded at the battle of Shiloh and was retired as unfit for further service. He resumed practice in Peoria for a time but eventually gave up medicine for literature. He was an accomplished linguist, speaking six languages. He wrote a creditable drama based on the Mexican Revolution involving Maximilian and his Empress Carlotta.

Dr. William R. Hamilton practiced in Peoria for many years. He fostered, built and became president of the Peoria and Rock Island Railroad. As these duties became greater he gave up the practice of medicine.

The earliest instance of group practice in Illinois was probably at Equality near Golconda. Prior to 1850 Drs. Drake, Dunn and Watkins of the "Saline" formed a partnership and took care of the practice for many miles around. Dr. Dunn served in the legislature and was a friend to both Douglas and Lincoln. He was a man of great personal bravery as indicated by testimony given by G. W. Covert in open court at Shawneetown in 1879. Logan Belt was the leader of a gang that had killed several people in a feud and had wounded Covert a number of times because he knew too much about the gang. Covert escaped to Dr. Dunn's home to have his wounds treated and Belt and his gang followed to finish him. However, the doctor refused to give him up. Covert said: "He is a bad man to fool with and the crowd went away without me."

Dr. Lucien Prentiss Cheney came to Chicago in 1850. Two years later he was appointed City Physician. As such he had the supervision of the smallpox hospital. While holding this office, he had passed an ordinance forcing vaccination upon the unprotected. This made him the dean of the preventive medicine contingent. Dr. Cheney was one of the founders of the Episcopal Church of the Atonement, which later became the Cathedral of S. S. Peter and Paul.

Dr. William M. Chambers, of Charleston, practiced medicine and surgery in Covington, Kentucky, and was the president of the Kentucky State Medical Society before he moved to Coles County in 1855. In October, 1861, President Lincoln appointed him Brigade Surgeon. He served in the army of the Cumberland until July, 1865. He was twice breveted—first as Lieutenant Colonel and then as Colonel for meritorious service and for excellence of his reports and his superior management of hospitals. He was president of the Illinois State Medical Society and of the Aesculapian Society of the Wabash Valley, and a member of the first Board of Health of Illinois.

Dr. Charles Chandler, of Cass County, is said to have been the first physician in Central Illinois to adopt the use of quinine as a remedy, the first to inflict bodily pain to counteract the failure of respiration in an overdose of opium and the first to oppose the custom of indiscriminate bleeding. Dr. Chandler probably built the first cabin in the county and in it conducted a drug store and office. To save the settlers of that territory the long trip over almost impassable clay roads to Beardstown, he and his brother erected a number of stores and shops for artisans. They also established a large general store and a pork packing plant in which they slaughtered as many as 3,000 hogs annually. Dr. Chandler was interested in religion and donated a building lot to every church in the community ex-

cept the Christian Church and for this charged but half price. He also donated land for a public park and a cemetery.

The idea of public health service as it was finally expressed in the first permanent statutes grew out of two definite conceptions. One was that "good doctors" are the most important factor necessary to good public health. The other conception was that sanitation, quarantine and hygiene are things which when properly applied will promote public health beyond the capacity of private practitioners no matter how efficient. The "good doctor" conception was the older and was probably the reason the legislature delegated to the Board of Health the regulation of medical practice.

Dr. John H. Rauch was one of the foremost health officers of his time. He had invaluable training in this respect as chief medical officer in Grant's armies during his Tennessee and Virginia campaigns. In 1860 Chicago by city ordinance abolished the health department, city physician and health officer. Two years later Dr. N. S. Davis, for forty years a leader in medicine in Chicago and Illinois, said he knew of no city except Chicago with a population of 100,000 that had neither a health officer, board of health, nor any other official sanitary organization. However, these words had no effect until Chicago was stricken by a cholera epidemic in 1866. As a result of that horrible experience Dr. Rauch, Dr. Davis and other leaders were able to secure the enactment of an ordinance by which the health department was organized on a firm basis. Dr. Rauch became sanitary superintendent from 1867 to 1873. He was responsible for the sanitary regulations following the great fire. He was responsible for moving the cemetery out of Lincoln Park. He became president of the State Board of Health when it was organized July 12, 1877. He remained as president, secretary or member of it till 1891.

During this period his influence extended far beyond the state boundaries. His most signal service was the promotion of higher medical education. After the Board of Health was established and the Medical Practice Act went into effect July 1, 1877, it was Dr. Rauch's duty as president of the State Board of Health to superintend the administration of the Medical Practice Act. His earnestness in the measure was shown by the promptness with which he had application papers prepared and the comprehensiveness of the examination questions which nongraduates were required to answer. To him more than to any one else, indeed more than to all others, is due the credit for the medical practice acts of other states, weeding out quackery and extending terms of medical colleges from three to four years, requiring additional study preliminary to conferring the medical degree.

Dr. John Arnold, of Peoria, was a personal friend of Abraham Lincoln, who appointed him U. S. Consul at St. Petersburg, Russia, during the Civil War period.

Dr. J. C. Goodhue, as councilman from the first ward, had so much to do with the ordinance to establish public schools that he is called the father of Chicago's public school system. He was a well-established and prominent practitioner when Dr. Brainard came to Chicago and with him was one of the founders of Rush Medical College.

Medical education. Until 1877 the State exerted practically no control over medical practice. Any one who wished to treat the sick could do so by holding himself out as possessing some ability along this line. When the Thomsonian school was at its height a large number of certificates were sold giving the holder the right to practice medicine without any medical study. Any man who could pay the price ($20) was permitted to prescribe for the sick and administer such remedies as were endorsed by this cult, which was founded on the use of remedies of vegetable origin. The certificate read about as follows: This may certify that we have received of ..... Twenty Dollars for the right of preparing and using, for himself and family, the Medicine and System of Practice secured to Samuel Thomson by Letters Patent from the President of the United States.

Some men were practically coerced into the practice of medicine as illustrated by Dr. Jacob Bishop of Effingham County. In early life he had secured a small medical library not with the view of practicing medicine but simply to improve himself. Later he often found himself surrounded by sick neighbors and when no physician was available he did what he could in the emergency. His work was so well done that calls on his time increased until eventually it was all taken up in the practice of medicine. His repu-

tation extended beyond his own county and he eventually developed a very large practice.

The first annual report of the Board of Health, comprising the period July 12, 1877, to December 31, 1878, states that "about 3,600 non-graduates were practicing medicine in Illinois when the Act went into effect. Of these about 1,400 have since left the state or quit practice."

Other men spent some time with a preceptor and then spent the required time at medical school or not as they elected. Dr. Joseph O. Hamilton is an example of that type. He was the first native president of the Illinois State Medical Society, being elected in 1871. Part of his early education was received in the little stone school house provided for by the will of Dr. Silas Hamilton. He began his study of medicine with Dr. Silas Parker of Athens, Ohio, and continued with Dr. William Blackstone. In 1843 he went to Jerseyville and practiced under Dr. James C. Perry for one year, after which he located in Calhoun County. Evidently he felt the need of further education and so gave up his practice and taught school. He then attended lectures at the Medical University of Missouri for one year and then returned to practice with Dr. Perry, married his daughter and became "one of the most celebrated physicians in the west." Some of his essays are found in the Transactions of the American Medical Association for 1870 and 1872.

A hundred years ago Rush was the only medical school chartered in Illinois. Since that time forty-three medical colleges have been organized. Dr. Boal in 1882 mentioned a "swarm of them." Schools have been in operation, usually for only a short time, at Galena, St. Charles, Galesburg, Quincy, Jacksonville and Rock Island.

In the early years material for dissection could be obtained only by robbing graves. Dr. G. W. Richards was mobbed, forced to leave St. Charles, and his school, the first in the State, the Franklin Medical College, was forced out of existence because some of his students had robbed a grave near Sycamore. A mob stormed the Illinois College at Jacksonville because of the grave-robbing activities of some of the students. Dr. Samuel Adams gave the mob his word that such acts would not be repeated. The school probably closed as did many others because material could not be obtained.

Our Society finally secured the enactment of laws legalizing dissection and providing lawful ways of securing bodies.

Present position—medical aspect. Consider the picture today. Cholera and yellow fever have been gone for more than half a century. Typhoid is no longer a major public health problem. The United States has a lower loss of life from diphtheria than does any other first-rate nation. The State Department of Public Health's recent bulletin says we have reached the stage where people can "take it or leave it" so far as smallpox and diphtheria are concerned. That is, they can be rendered immune or run the risk of falling a victim to them. The diarrheal diseases no longer constitute any great menace. Malaria is seldom seen in the north end of the State.

Mentally deranged patients are now treated kindly—thanks very largely to the efforts of the Illinois State Medical Society—and more effectively than ever before.

1939 was the best health year the United States has ever known. It was not only the best we have ever known but no other country of comparable size and population has ever enjoyed an equal degree of health.

In 1840 the average length of life was probably less than forty years. In Illinois it is now sixty, and you downstate folks live two years longer than we do in Chicago. In 1882-1883 the average age of Illinois doctors who died was fifty-two years. In 1939 the average age of doctors at death in the United States was 66.1 years.

However, this should be taken as a report of progress. We have not in our one hundredth year suddenly arrived at a state of diagnostic or therapeutic perfection. The mortality from diabetes is still increasing, especially among women of menopausal age and beyond, and the rise is greater in Illinois than in the country at large.

In the last twenty years 40,276 cases of smallpox with 158 deaths have been reported in Illinois and the aggregate time spent in quarantine on account of this disease by the inhabitants of this state during those two decades was 4,646 years. The aggregate outlay in money was over $2,000,000. In Massachusetts during the same twenty years 409 cases of smallpox were reported and the last case was reported in February, 1932.

The explanation is in two words: "compulsory vaccination," used in Massachusetts but unconstitutional in Illinois.

In 1880 tuberculosis, diarrhea, pneumonia and diphtheria caused the largest number of deaths. In 1938 heart disease, cancer, nephritis and cerebral hemorrhage, embolism and thrombosis led the list. In other words, we die of different causes, and our fight to control these causes is one of the pressing problems of today.

Present situation—social aspects. There is much argument today as to the distribution and availability of medical care. Undoubtedly there are in the United States some who need and want medical care and fail to get it because they refuse to accept it on the charity or near-charity basis on which they could secure it. How many such people there are no one knows. The so-called National Health Survey does not give an accurate picture. The present attitude of government employees contributes much heat but little light on the subject. Some 3,900 plans, initiated by the medical profession, for increasing the distribution of medical care to persons in the low-income group have been or are being tried.

Dr. Carl E. Black, oldest living past president of the Illinois State Medical Society, says that today there are in Pike County only twenty-five physicians, a loss in forty years of more than sixty per cent. The reason for this, he says, is the revolution in the character of medical practice. Hygiene and sanitation have brought better conditions of health. "The debt which the people owe to fly screens, refrigeration and the better preservation of meats, vegetables and fruits in decreasing disease is almost beyond computation."

A doctor thirty miles from the patient today is closer in point of time than a doctor who was only five miles away in 1840.

From its inception the Illinois State Medical Society has been interested in public health and has spent thousands of dollars of its funds to improve health conditions in Illinois. The Society and most of its members have been opposed to the extravagant expenditure of federal funds in the State. Illinois was one of the few states that did not accept federal money under the Sheppard-Towner Act, but the decline in infant and maternal mortality was as rapid in Illinois as in those states that did accept that money. Haven Emerson, in discussing the activities of the Children's Bureau, says: "I do not know of any evidence which would indicate that the progressive improvement in infant health and maternal health is in any way related to the federal assistance that has been given to the states in that regard."

Griffith says: "Unfortunately the medical profession by subtle propaganda emanating from Washington has been jockeyed into the false position of appearing to oppose for selfish reasons legislation to relieve human suffering." The pendulum has swung from the point where government took no interest to the point where it proposes to exercise complete control of all phases of medical practice. One has only to look at countries having the largest amount of government controlled medicine—Russia, Germany, France and England—to realize that as government intervention increases scientific achievement decreases.

The question is: Shall the doctor continue to care for the sick having their confidence and acting according to his own best judgment, as he has in bringing us to the highest degree of health ever attained by any nation, or shall he care for the sick according to rules laid down by federal employees after they have destroyed the patient's confidence in the doctor? The social workers and salaried reformers should realize that medical care will continue to be rendered by doctors, most of whom will still be members of the American Medical Association, unless, of course, it is proposed to lower the educational requirements of doctors as has already been done in England by a similar group.

In solving the problem of improving the quality and of extending the distribution of medical care we should bring to it the spirit mentioned by Raymond Fosdick. In a recent report of the Rockefeller Foundation he says:

"When sincere and high-minded men hold opposite views on the complex issues of a democracy and when no effective effort is made to narrow or define those differences by objective analysis, the tendency is for the differences to freeze into ideologies and thereby to shift from an intellectual to a purely emotional basis. Instead of a creative struggle of facts and ideas, conflict degenerates into a mere fight for power. But if by objective and competent study the issues are more precisely defined and the facts

more exactly known, then the conflicting views which still remain can, with reasonable good will, more readily be resolved. Certainly if by competent study we widen the area of definitely ascertained fact and relation, we shall build a more solid substructure for public and private policy."

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THE ILLINOIS STATE PROGRAM FOR CRIPPLED CHILDREN

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This newest Division in the Department of Public Welfare came into existence in April, 1937, financed by funds derived from the Children's Bureau of the United States Department of Labor through the appropriations for crippled children contained in the Federal Social Security Act. These funds have made it possible to extend systematic case-finding, community clinics and other welfare services to a large group of crippled and deformed children in the State of Illinois that had previously been neglected.

During the three years just past this State-wide organization has been perfected. The first step in planning for crippled children's services is to have an estimate of the numbers of such children that will probably apply for services. Accordingly, a State-wide survey through the public and other schools of the State has just been completed. This survey consists of a personal canvass of each school, both rural and city, by one of the field nurses from the Division for Handicapped Children. The results of this survey are given in Table 1. The indications are that the per capita incidence of crippled children in this State is considerably less than the average found in other states. In Illinois, upon the basis of the survey mentioned, the incidence is 3.2 per thousand of population, meaning that there are from 25,000 to 30,000 such children in the State. The 1929 census of crippled children made by the Department of Public Welfare cooperating with other state departments revealed 10,011 such children inclusive of Chicago, an incidence of but 0.7 per thousand. It is now certain that a number of crippled children were overlooked, especially in inaccessible areas and in the southern half of the State. The reason for the smaller incidence of crippled children in our State than in many others is that many of the conditions that lead to crippling have never been widely active among our population. Today

TABLE 1—SUMMARY OF COUNTY SURVEYS FOR CRIPPLED CHILDREN CLASSIFIED ACCORDING TO DIAGNOSIS

County	Total No. of Crippled children	Incidence per 1000	Percentage Distribution						All Others
			Polios		Spastics		Plastics		
			No.	%	No.	%	No.	%	
Adams	78	1.2	8	10	4	5	8	10	58
Alexander	123	5.5	9	7	3	2	12	10	99
Bond	70	4.9	8	10	7	10	8	10	47
Boone	28	1.9	2	7	1	4	6	21	19
Brown	23	2.9	1	4	3	13	3	13	16
Bureau	158	4.1	29	18	14	9	5	3	110
Calhoun	41	5.1	11	27	3	7	6	15	27
Carroll	64	3.5	14	22	2	3	4	6	44
Cass	32	1.9	4	13	2	6	1	3	25
Champaign	236	3.7	28	12	22	9	17	7	169
Christian	141	3.8	24	16	19	13	14	10	84
Clark	59	3.3	10	17	10	17	4	7	35
Clay	55	3.4	11	20	3	5	3	5	38
Clinton	47	2.2	9	19	6	13	5	11	27
Coles	101	2.7	24	24	13	13	6	6	58
Cook	1140	0.3	126	11	110	10	73	6	831
Crawford	91	4.3	17	19	10	11	20	22	44
Cumberland	46	4.4	8	17	7	15	5	11	26
DeKalb	68	2.0	5	7	8	12	4	6	51
DeWitt	74	4.0	17	23	6	8	7	9	44
Douglas	58	3.2	10	16	3	5	4	7	41
Dupage	210	2.3	36	17	14	7	13	6	147
Edgar	78	3.1	11	14	9	11	1	1	57
Edwards	32	3.9	2	6	6	19	10	31	14
Effingham	83	4.4	11	13	4	5	7	8	61
Fayette	84	3.6	16	19	11	13	8	9	49
Ford	44	2.9	11	25	5	11	5	11	23
Franklin	213	3.3	25	12	34	16	16	8	138
Fulton	104	2.4	21	20	17	16	11	10	55
Gallatin	50	5.0	6	12	4	8	1	2	39
Greene	105	5.1	15	14	7	7	11	10	72
Grundy	50	2.6	12	24	6	12	8	16	24
Hamilton	58	4.5	6	10	4	7	17	29	31

County	Total No. of Crippled children	Incidence per 1000	Percentage Distribution: Polios No.	Polios %	Spastics No.	Spastics %	Plastics No.	Plastics %	All Others
Hancock	27	1.0	4	15	5	18	2	7	16
Hardin	37	5.4	7	19	3	8	5	13	22
Henderson	16	1.8	2	13	2	13	1	6	11
Henry	272	6.2	37	13	14	5	6	2	215
Iroquois	79	2.4	22	28	4	5	4	5	49
Jackson	184	5.2	28	15	12	7	23	12	121
Jasper	67	5.2	6	9	2	3	6	9	53
Jefferson	134	4.3	22	16	19	14	20	15	73
Jersey	40	3.2	8	20	5	13	5	13	22
Jo Daviess	43	2.1	15	35	3	7	3	7	22
Johnson	51	5.0	1	2	3	6	10	20	37
Kane	249	1.9	43	17	28	11	19	7	159
Kankakee	177	3.5	29	16	29	16	5	3	114
Kendall	27	2.6	7	25	0	0	2	7	18
Knox	169	5.2	18	11	11	6	7	4	133
Lake	253	2.4	47	18	16	6	20	8	170
LaSalle	481	4.9	53	11	34	7	17	4	377
Lawrence	107	4.9	13	12	10	9	13	12	71
Lee	71	2.2	13	18	13	18	5	7	40
Livingston	110	2.8	23	21	11	10	9	8	67
Logan	287	5.9	15	5	17	6	8	3	247
McDonough	74	2.7	13	17	8	11	9	12	44
McHenry	68	1.9	11	13	8	12	3	4	46
McLean	273	3.7	47	13	15	5	28	10	183
Macon	133	1.6	29	22	13	10	8	6	83
Macoupin	183	3.8	27	14	8	4	22	12	126
Madison	313	2.2	63	20	52	13	27	9	171
Marion	113	3.2	19	17	7	6	12	11	75
Marshall	35	2.7	8	23	8	23	4	11	15
Mason	119	7.9	10	9	2	2	13	10	94
Massac	61	4.4	6	10	6	10	13	21	36
Menard	41	3.9	10	24	0	0	2	5	29
Mercer	28	1.7	5	18	3	10	1	4	19
Monroe	32	2.6	2	6	5	16	8	25	17
Montgomery	138	3.9	5	4	8	6	21	15	104
Morgan	75	2.2	17	23	10	13	4	5	44
Moultrie	30	2.3	3	10	6	20	2	7	19
Ogle	64	2.7	12	19	7	11	1	2	44
Peoria	256	1.8	45	21	43	2	11	4	157
Perry	57	2.5	12	21	11	19	3	5	31
Piatt	49	3.2	13	27	4	8	6	12	26
Pike	46	1.9	3	7	2	4	7	15	34
Pope	40	5.0	3	7	3	7	4	10	30
Pulaski	57	4.5	9	13	6	9	4	6	48
Putnam	21	4.0	1	5	2	9	3	14	15
Randolph	76	2.6	6	8	24	32	4	5	42
Richland	73	5.2	10	13	10	13	6	8	47
Rock Island	340	3.5	35	10	30	8	24	7	251
St. Clair	422	2.7	62	15	67	14	21	5	272
Saline	135	3.6	32	24	12	8	3	2	88
Sangamon	315	2.8	65	20	22	6	8	3	220
Schuyler	28	2.4	5	18	2	7	4	14	17
Scott	25	2.9	2	8	0	0	2	8	11
Shelby	73	2.9	14	19	9	12	6	8	43
Stark	42	4.6	7	17	2	5	5	12	28
Stephenson	159	3.9	24	15	5	3	7	4	124
Tazewell	231	5.0	35	15	14	6	9	4	173
Union	62	3.1	10	16	8	13	6	9	38
Vermilion	206	2.3	31	15	13	6	21	10	141
Wabash	66	5.0	9	13	9	13	11	17	37
Warren	85	3.9	20	24	5	6	4	5	57
Washington	18	1.1	3	17	3	17	1	6	11
Wayne	65	3.4	18	28	5	9	5	9	37
White	56	3.1	10	18	8	14	7	13	31
Whiteside	214	5.5	26	12	13	7	9	4	166
Will	253	2.3	25	10	27	11	15	6	186
Williamson	143	2.7	11	8	22	15	10	7	100
Winnebago	381	3.2	85	22	37	10	20	5	239
Woodford	49	2.6	10	20	3	6	6	12	30

Note: Total cases of Poliomyelitis.....1,888
Total cases of Spastics.....1,210
Total Plastic cases..... 942
All others 8,528

there is relatively little tuberculosis among children. Epidemics of poliomyelitis (infantile paralysis) have been light in our State as compared with those along the Atlantic seaboard, since there are but 200 to 800 new cases each year, these numbers being about equally divided between Chicago and rural Illinois. Since more than one-half of these recover spontaneously with little or no treatment, the number of potential cripples is correspondingly less. Previously no funds have been available for follow-up on these cases in any section of the State except in Chicago. Accidents and congenital causes for crippling are apparently as active in our population as in other states. Thus, there is a large number of children with defective mentality, with congenital defects of the central nervous system and with other congenital deformities such as clubbed feet, wry-neck, etc.

In Illinois there is no "Crippled Children's Law" but the statutes provide for a State Orthopedic Hospital (Illinois Surgical Institute for Children) which is operated in Chicago in affiliation with the University of Illinois College of Medicine. This institute is a modern, well-equipped orthopedic hospital and now has 130 beds for children beneath the age of sixteen years. This institution and the Division for Handicapped Children are collateral divisions in the Illinois State Department of Public Welfare. The former receives a biennial appropriation from the General Assembly of the State of Illinois, those funds also being used to match against Federal Funds derived from the Social Security Reserves. A State Commission for Handicapped Children to study problems affecting these persons was created by the General Assembly in 1930. This body also acts in an advisory capacity to the Division for Handicapped Children.

ORGANIZATION OF THE DIVISION FOR HANDICAPPED CHILDREN

A full-time staff was necessary to cover the proposed activities for crippled and deformed children which were to supplement existing services in down-state and rural Illinois. An orthopedic surgeon, a supervising nurse and a trained and experienced medical social worker make up

the central office staff which directs the program. Such a plan thus provides for cooperative representation of these interests in the State crippled children's program. The field staff at present is composed of nine registered public health nurses, some of whom are trained physiotherapists and of three trained medical social workers who carry out their appropriate duties by direction from the central office. A schedule of out-patient clinics is now prepared for small cities and towns a year in advance. Local volunteer welfare agencies such as committees representing lodges, Rotary clubs and the American Legion have been helpful in aiding the location of these clinics and in providing local publicity and cooperation. Corresponding

capped Children are aimed at prevention and early finding of conditions leading to crippling, providing diagnostic and other minor services in the out-patient clinics, providing hospital and convalescent care, arranging for follow-up after hospital and clinic visits and referral of patients to other State and private agencies. This latter function is important to complete the work which the Division for Handicapped Children has initiated.

In our State, five departments or divisions participate to some extent in activities which affect crippled children. (See Figure 1). The field personnel of the Department of Public Health visits every case of acute poliomyelitis, being instrumental in supplying diagnostic help

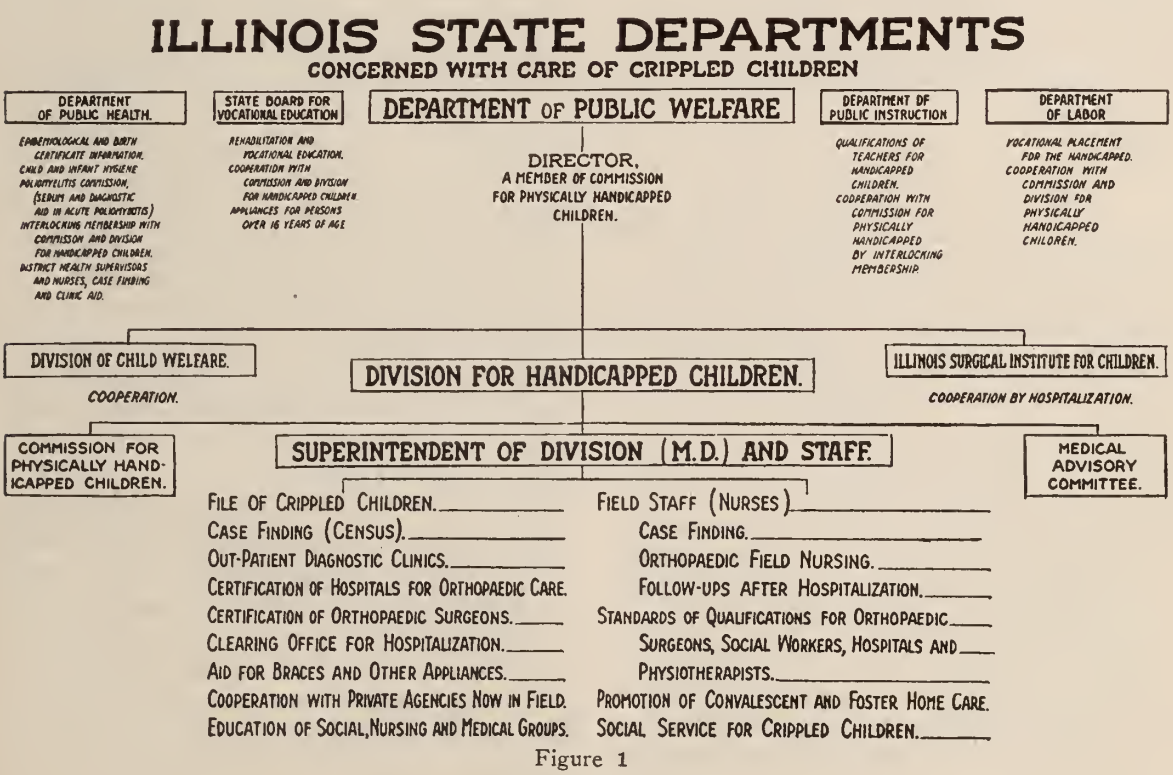


Figure 1

county medical societies have direct supervision of these clinics, the local physicians cooperating closely with the Division in finding and referring patients who are entitled to these services. So effective is this latter bond that during the fiscal year 1937-1938 eighty per cent of our patients were directed to the clinics by practicing physicians. Invariably groups of local physicians attend the clinics, attendance being heightened by a routine personal notification system.

The activities of the Division for Handi-

and convalescent serum. Through these activities and other field work many crippled children are located. This same Department sends with each birth registration certificate an illustrated pamphlet supplied by this Division calling attention to the benefits of early treatment for congenital deformities, an activity which will be described later under prevention. Routine reporting of congenital deformities discovered at birth is obtained by cooperation with the birth registration section of the Division of Vital

Statistics in the Department of Public Health. The Division of Child Welfare in the Department of Public Welfare also finds many cases for us, particularly the badly neglected ones and those which are also socially dependent and neglected. The State Board of Vocational Education and Rehabilitation furnishes vocational training and appliances to eligible persons beyond sixteen years of age, who have finished the usual secondary education. In cooperation with the Superintendent of Public Instruction, the Fiscal Supervisor of the Department of Public Welfare administers annually a $100,000 State fund, supplying financial aid to individual school districts to help in transporting and schooling crippled children. Though curtailed by the present economic and labor restrictions, the State Department of Labor has an organization which functions to some extent in furnishing vocational guidance and placement to handicapped persons.

PREVENTION OF CRIPPLING INCLUDING FOLLOW-UP ON POLIOMYELITIS CASES

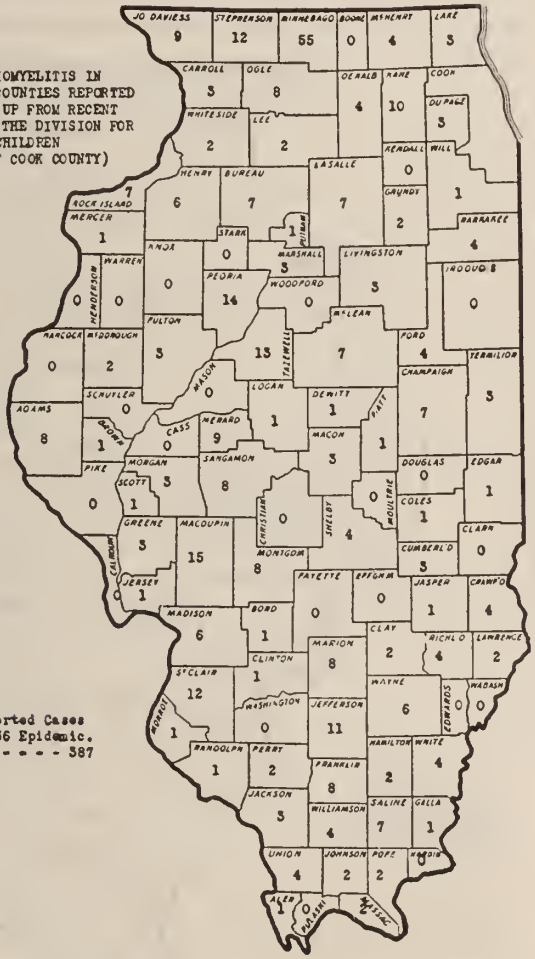
The early treatment of congenital conditions arranged through reports from individual physicians and from the publicity attending receipt of the pamphlet which goes to the recipient of each birth registration certificate, prevents advanced deformity and minimizes the necessity for later surgical operations in their treatment. Deformities due to the arthritis of childhood and to osteomyelitis and other infections can only be minimized by a thorough understanding of the principles of treatment of these conditions by the general physicians of the State. Through cooperation with the State Medical Society a program of education upon these conditions is under way, many addresses having been delivered by the Superintendent and other personnel of the Division. Education of physicians upon the subject of the early diagnosis and treatment of poliomyelitis has been in progress for ten years just past with increasing results. An orthopedic consulting service to advise upon the methods of early care in acute poliomyelitis was available for the first time in Illinois in 1938. Since that time, this service has been extended and perfected. So important is such a service that I wish to describe it in detail at this point. In Chicago, a compulsory hospitalization ruling of the Board of Health affects the concentration of almost every case in the city in the two large infectious disease hospitals, where orthopedic care is begun. This is followed up by private practicing orthopedic surgeons and by the orthopedic nurses of the Chicago Visiting Nurse Association. In Illinois, outside of Chicago, an orthopedic consultant from the Division for Handicapped Children makes an early visit to such cases as they are reported, in company with the District Health Supervisor of the Department of Public Health. This poliomyelitis consultant advises the Division of the cases most likely to benefit and those most urgently in need of hospitalization. Often before the quarantine is over, these patients are sent to the orthopedic wards in one of the general hospitals of the State that serve as part of the State plan for orthopedic care. Funds are not available as yet for the hospitalization of all cases in the event of a heavy epidemic, but several hundred can be provided with early hospital care each year. Physiotherapy and braces are supplied as indicated. A booklet describing in detail the positions and means of early after-care in this disease is mailed to every physician of the State who reports a case of poliomyelitis. Very little can be done in preventing cerebral palsy, but as orthopedic care becomes generalized over this State, fixed deformities in this condition will become rare. Tuberculosis of the bones and joints is but a minor problem in Illinois. Diagnosis is usually made early and adequate treatment is now the rule.

The summers of 1936 and 1937 witnessed the epidemic prevalence of poliomyelitis in both Chicago and the down-state section upon a scale equal to the severest epidemics that have ever been reported in this State. Even though the incidence of this disease did not equal that of the severe epidemics that have visited the Atlantic seaboard, nevertheless, a total of 602 cases was reported outside Cook County during these summers. The Illinois State Department of Public Health has never had funds available for systematic follow-up on these cases. Indeed, after the onset of paralysis, the disease does not long remain a problem involving communicable disease control but becomes an orthopedic problem. The majority of these cases have now been followed up through activities initiated by this Division. Approximately 50 per cent. of the cases from these two epidemics are under medical supervision in the clinics and hospitals

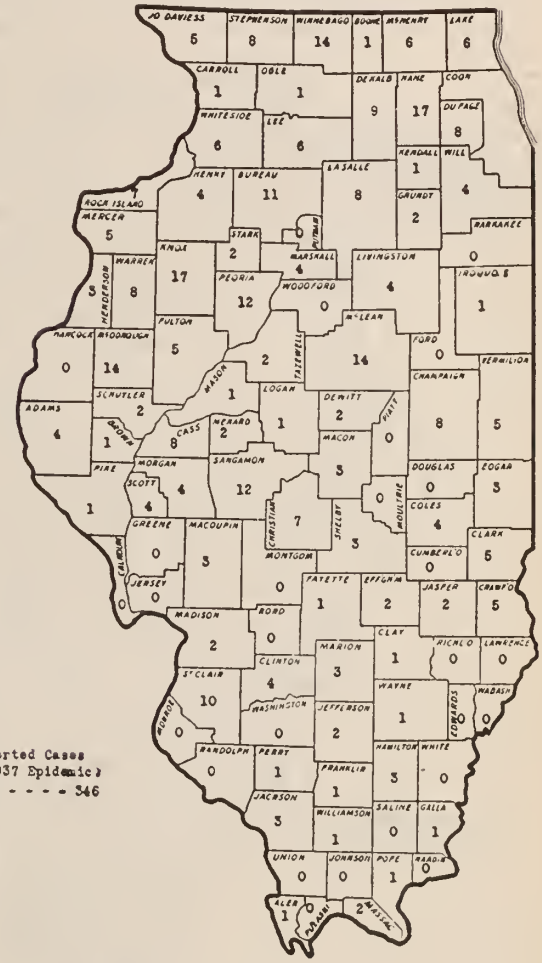
of this Division. Figure 2 shows the distribution of the reported cases of poliomyelitis for these years that have been seen in the clinics of this Division. One hundred and twelve reports of poliomyelitis cases were received during the summer of 1938 but upon investigation by the orthopedic consultants of the Division, but twenty-eight of these were found to be actual paralytic cases. Hospital care was furnished those who applied and who could qualify for the

FIGURE 2

CASES OF POLIOMYELITIS IN ILLINOIS BY COUNTIES REPORTED AND FOLLOWED UP FROM RECENT EPIDEMICS BY THE DIVISION FOR HANDICAPPED CHILDREN (EXCLUSIVE OF COOK COUNTY)



(A) Reported Cases from 1936 Epidemic. Total - - - - - 387



(B) Reported Cases from 1937 Epidemic. Total - - - - - 346

Figure 2. (A-B)

services of the Division. In time this service should improve the quality of after-care given to the victims of this disease and thus minimize residual disability. A large share of the deformities in this disease are preventable when constant orthopedic supervision is available.

A survey of the numbers of respirators available in the State has been made by the Division, so that the location of these "iron lungs" is known whenever an emergency is made known to the Division. The executive branch of the government allocated a portion of the contingent fund for the purchase of the seven additional respirators which are now located in seven strategically located State hospitals from which places they can be transported to any hospital in the State where they may be needed by an arrangement that has been worked out with the State Highway Police. These seven "iron lungs" as well as a similar number of privately owned respirators will insure the availability of emergency care for acute cases of respiratory paralysis from poliomyelitis in every locality of the State.

Case Finding Activities: The Census of Crippled Children, Early Finding and Reporting of Congenital Deformities

The field staff of nurses has been engaged about half-time during the first two years of the operation of the Division upon the census of crippled children, requested by the Commission

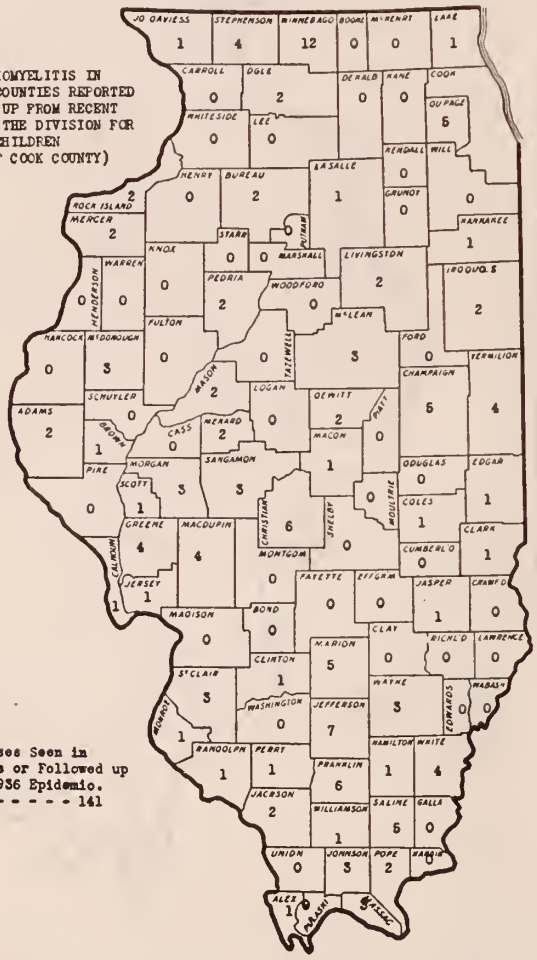
for Handicapped Children early in 1937. The methods used in making this census have been direct, thorough and meticulous: rural and other schools have all* been personally searched, a large task when it is recalled that there are more than twelve thousand school districts in the State. Physicians and surgeons throughout the State have been visited by these nurses, and all available records and sources containing information about crippled children have been consulted. The survey has been approached with the county as a unit. Progress of such an individually conducted survey has been necessarily slow. A large per cent of the total clinic visitation numbering 6,360, which represented 3,244 cases during the past two years, were either directly or indirectly guided to the clinics by contacts made in connection with the census. Table 1 gives a partial summary of the results of this survey.

The survey is of itself a case-finding activity, since cases needing care are seen in the clinics as soon as practicable and segregated into groups likely to benefit from orthopedic attention in hospitals. The others are cared for as out-patients in the clinics or in the offices of qualified orthopedic surgeons.

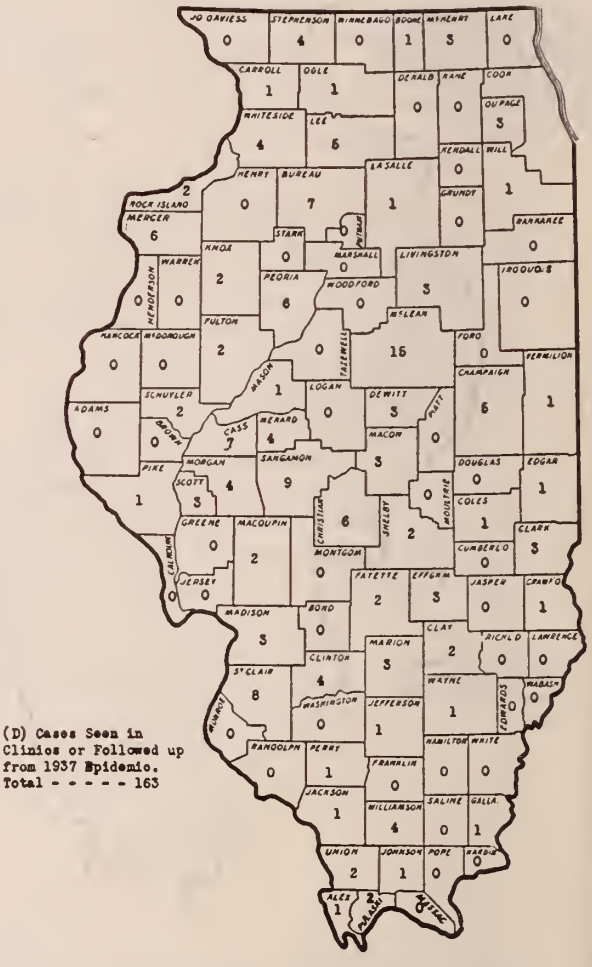
A census, however thoroughly made, even with the favorable publicity possible in rural areas, can never be a complete enumeration of the crippled residing in a given population unit, since those from the pre-school and adolescent groups are never completely uncovered. Some progress is being made with the former group through inquiries made in elementary schools, through publicity attending the pamphlet that the Division sends out with each Birth Registration Certificate, and the newly devised methods of reporting congenital defects by physicians and obstetrical nursing supervisors (described on page 000). Valuable aid is furnished in locating eligible persons from the

FIGURE 2

CASES OF POLIOMYELITIS IN ILLINOIS BY COUNTIES REPORTED AND FOLLOWED UP FROM RECENT EPIDEMICS BY THE DIVISION FOR HANDICAPPED CHILDREN (EXCLUSIVE OF COOK COUNTY)



(C) Cases Seen in Clinics or Followed up from 1936 Epidemic. Total - - - - - 141



(D) Cases Seen in Clinics or Followed up from 1937 Epidemic. Total - - - - - 163

Figure 2. (C-D)

older group through cooperation with the State Board of Vocational Education and Rehabilitation. Indications are from trial resurveys carried out within the year that seventy-five to ninety per cent have been found on our first survey. Already about a thousand children have been discovered who fall into the group of incurably crippled, likely to be dependent for a large share of their lives, for whom custodial care, either by the family or in an institution is indicated.

The Division of Vital Statistics of the Illinois State Department of Public Health, through a cooperative arrangement, sends out with each Birth Registration Certificate an illustrated leaflet prepared by the Division for Handicapped Children calling attention to the benefits of early treatment of congenital deformities and birth injuries. As a result of the circulation of this leaflet, much educational work has been accomplished and sixty cases have been called to the attention of the Division during the past eighteen months. Each case thus reported has been investigated by a medical social worker. Those in need of orthopedic or plastic surgical attention have been put under care.

Colored and perforated front sheets were devised that are now in each Birth Report Book used in reporting births to the Division of Vital Statistics of the Department of Public Health. These front pages request reports of congenital deformities of the new-born directly from obstetricians and from nursing supervisors of maternity wards. It has been thought wise to arrange for these reports other than as an integral part of the Birth Certificate, avoiding handicapping a person whose defect is curable, e.g., clubbed feet. The new report of birth forms to be available in 1940 carries this information as an integral part of the document.

ORTHOPEDIC TREATMENT IN CLINICS AND HOSPITALS INCLUDING CONVALESCENT CARE

The rendering of modern orthopedic care in Illinois is but a problem of merging hospital and surgeons' services with a large number of patients who need and could benefit from them, at the same time maintaining standards of medical care upon modern levels. These problems are now for our Division, largely social in nature: supplying information, transportation and incentive to children and families that lack them.

The State has been districted for clinic administration. Clinic schedules insure a meeting at least every two to four months in each small area composed of a group of counties. On our present schedule 85 clinics are held yearly in 30 different localities. Clinics are held by fraternal and private agencies at 30 additional sites in Illinois outside of Cook County. (See Figure 3).

Three thousand two hundred and forty-four different patients have been seen either in the clinics of the Division for Handicapped Children or in the offices of orthopedic surgeons during the past eighteen months. Of these, more than 1,500 have been sent to hospitals for treatment by this date. The Department of Public Welfare gave 51,060 days hospital care to crippled children during the fiscal year 1937-1938 and 75,774 days care during the fiscal year 1938-1939. Of these hospital days, 53,530 were provided with care in the wards of the general hospitals of the State (for location see Figure 4). While this number of hospital patients is not as impressive as the statistics from other states, it must be remembered that these are almost exclusively surgical cases, as brace and consultation cases are handled in the clinics. An estimate of the volume of our hospital program can be gained from the fact that more than a third of the patient days in all the orthopedic hospitals and wards of the entire State including Chicago are made up by patients referred by our Division, although none of our patients originate in the metropolitan area.

Convalescent care in modern institutions is obtained by the Division in two places, one in the northern part of the State near Chicago, and the other in the central portion. Convalescent care is also obtained in the orthopedic wards of the general hospitals of the State at a reduced per diem rate. The indications for convalescent care in Illinois are largely medical, the return of the patient to his family at the earliest time consistent with maximum improvement being stressed. Follow-up by clinic and home visits is systematically available through the field nursing and social service staff.

PUBLIC HEALTH AND ORTHOPEDIC NURSING SERVICE IN THE DIVISION FOR HANDICAPPED CHILDREN

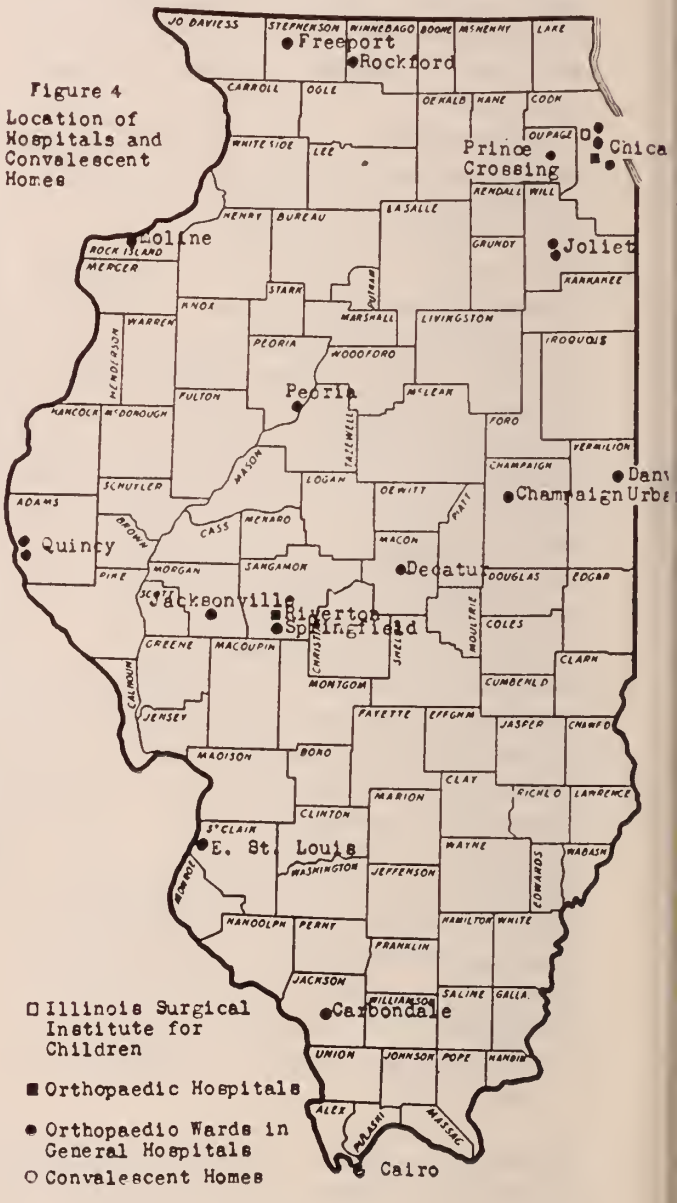
The field nursing service of the Division for Handicapped Children is at present composed of nine permanent nurses who have been trained in physical therapy for the purpose of giving a restricted number of treatments in the home, as directed by the orthopedic surgeons. The nine nurses are each assigned to a district consisting of from twelve to twenty counties. (See Figure 5). These orthopedic field nurses also act in an advisory capacity to local community nurses regarding orthopedic patients, find patients needing services and perform the preliminary work incident to holding a clinic, as well as follow-up after the clinic has been held. At all times, the State orthopedic field nurse serves only to aid and not to supplant the work of the local community nurse. In order that she may efficiently carry out her part of the work of the Division, she needs to be informed as to local resources for caring for the crippled child and to acquaint lay persons with the work of the Division.

One or more nurses have assisted in each clinic held by the Division. They have been responsible for a large share of the attendance of needy crippled children to those clinics through the case-finding work of the survey in-

FIGURE 3



Figure 4
Location of Hospitals and Convalescent Homes



cluding visits in the local community to physicians and local welfare organizations. Following each clinic, minor needs of the crippled child are arranged locally by the nurses. Transportation is arranged either to one of the downstate hospitals or groups of children are escorted to the State University Hospital in Chicago on a regular schedule. Corrective shoes and some of the more simple braces are delivered and fitted by the nurses. The staff nurses made 10,040 field visits during the fiscal year 1937-1938.

FIGURE 5



ORTHOPAEDIC FIELD NURSING SERVICE OF THE DIVISION FOR HANDICAPPED CHILDREN

A staff conference of the field nurses of the Division has been held monthly, at which time the field nursing work is correlated with the medical social work and the nursing staff received instruction, including education lectures upon subjects relating to their work or to other phases of Public Health work.

PROBLEMS RELATING TO ORAL AND PLASTIC SURGICAL CARE

The Division is charged by the administrative provisions of the Federal Social Security Act with the duty of furnishing oral and plastic surgical care to children in need of it in the State outside of Chicago. These children have been seen in the out-patient clinics along with orthopedic cases. During the year all these patients, with the exception of the group of plastic surgical cases that are usually cared for by

the orthopedist, were hospitalized in the wards of five large general hospitals in Chicago where recognized oral and plastic surgeons were able to furnish expert care. Fifty-six oral surgical cases and twenty-five plastic surgical cases have been given care during the year.

Speech training following the closure of an intra-oral defect is just as important as the closure itself. There are no special schooling facilities for this type of work in the public schools of the State, so that this is a problem needing an early solution. Some preliminary conversations have been held with representatives of the University of Illinois and with the Normal Schools of the State, and it is highly probably that some cooperative arrangement will be worked out in the future. The University of Illinois College of Dentistry has been most helpful in furnishing a restricted amount of dental care, including orthodontia that has arisen as an auxiliary problem in the surgery of the jaw and face.

ADMINISTRATIVE PLANS FOR THE COMING YEAR

The problems of speech training, and of course cerebro-spastic paralysis, will need attention during the coming year. No provision is made under the existing State Laws or can be made in the administation of Federal Funds for that distressing group of permanently disabled and incapacitated persons of more or less normal mentality known as the "Custodial Group." In a survey (1936) made by the Michigan Society for Crippled Children, 510 such persons were found and investigated. Based upon a comparison of populations, Illinois has possibly two or three times this number for whom there are no provisions. Reports available from counties in which our survey is now complete, list more than 600 such individuals. Reports have still to be compiled from Cook County and from about one-fourth the remainder of the State. These persons are a particularly unhappy and forgotten group which needs either extensive, partial or total dependent care. Because of their condition and the constant care needed, they can not live a normal life and are a constant drain upon parents and guardians. In most instances they are from poor homes, and often are the factor that either keeps such homes among the sub-normal group or results in a broken home.

There are now five fully equipped orthopedic centers in the State outside of Chicago (Rockford, Peoria, Springfield, Champaign and Decatur) staffed by properly qualified surgeons who are prepared to supervise and carry out any type of modern orthopedic surgery, including the after-care of acute and convalescent poliomyelitis. Orthopedic surgeons located in three additional places are equipped to handle certain types of cases.

SUMMARY

Since the fiscal year 1936-1937, the Division for Handicapped Children in the Department of Public Welfare has had available a State-wide field nursing and social service staff to find children needing plastic surgical and orthopedic surgical care and who can qualify for publicly administered care. Case-finding activities of specialized type have been initiated for persons with congenital deformities and acute poliomyelitis (infantile paralysis). In one hundred and sixty-eight out-patient clinics held in thirty different sites during the past eighteen months, 3,240 children were seen out of the total registration of more than fifteen thousand orthopedic and plastic surgical cases. Hospital care has been furnished to more than a thousand children. The survey for Handicapped Children and other activities of the field nursing and medical social service departments of the Division are described, as well as cooperative activities with other public and private charitable organizations. The funds utilized in establishing and maintaining these services were obtained by Matching Federal Funds under the provisions for crippled children contained in the Society secuirty Act.

*A census reported by mail or made by untrained workers is unfruitful and misleading, as can be verified from the experience of the Michigan Crippled Childrens' Commission. In that state in 1934, the school census returned 4,601 reports. Of these, 3,025 cases had already been listed, 690 already discharged, leaving but 886 new names. Personal investigation of this latter number yielded but 231 new cases. In the following year (1935) 4,770 reports yielded but 169 new cases.

THE DOCTOR AND THE UNMARRIED MOTHER

W. C. Danforth, M. D.

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EVANSTON, ILLINOIS

From a purely obstetric point of view the problem presented by the unmarried pregnant woman does not vary from that of the woman whose

pregnancy has come about within the conventions of organized society. A discussion of the obstetric management of these patients would merely resolve itself into a discussion of obstetric practice, which is not the purpose of this communication. As the representative of the medical profession, and in a narrower sense of the specialty of obstetrics and gynecology, I wish to discuss the attitude toward the unmarried mother of a group of men whose life work is the management of the problems of reproduction and the ills peculiar to women. The men who lead obstetric and gynecologic thought in America, the men who guide the teaching of these subjects in the Universities and who direct the best known clinics and hospital services, are, almost without exception, men of broad mind, wide education, in some instances widely read outside of their special field of work. They are entirely competent to form an opinion upon the social aspect of a problem with which they are constantly in contact, for a large part of these mothers are cared for in the obstetric services of hospitals. The view-point which I shall try to convey is the one which is common to most of these men and to which I fully subscribe.

I do not believe that this problem is much more frequent now than in earlier years. Sex irregularities have always occurred. The man or woman who begins to criticize the generation immediately following that in which he or she belongs is usually showing the first sign of an oncoming senility.

Let us first discuss the unwed prospective mother. In some cases she is a woman of low standards, deficient morals and little responsibility, an individual of little value to society. Yet she must be cared for. She must be given the attention during pregnancy and labor that an enlightened society demands for every prospective mother. If the man who is equally the parent of the child were to be ill or injured he would be cared for in a hospital, or if he were imprisoned for some other offense against society, he would be warmly lodged, fed and clothed. She may be a young woman of intelligence, employed perhaps as a secretary or in some other responsible position. Marriage has been delayed, probably for lack of funds. The long controlled primitive biologic urge has escaped repression, perhaps only momentarily, but the girl finds herself among the unmarried expectant mothers. Such a young woman may possess the disposition, temperament and intelligence to make a wonderfully efficient wife and mother. She may therefore, potentially, be a greater asset to the community than at least some of those who regard themselves as being upon a higher moral plane. That a complete rehabilitation of such a young woman is possible will be testified to by any medical man who had any real breadth of observation of the problems peculiar to women. My own experience convinces me of the truth of this.

She may be a girl living at home, and though the atmosphere of homes may vary, it may be one in which the upbringing has been without fault. Again the biologic stimulus has escaped control but let us not assume the right to criticize nature for nature is wiser than we. Wthout this primeval deeply-rooted urge the race would soon die out. The control which an organized society demands, and which is entirely proper, is artificial and not the urge itself. In most cases the family of such a girl will help her in her trouble, and, if the responsibility of parenthood means anything, they should.

Every obstetrician of wide experience has met with instances of young women in families of unquestioned social standing whose pregnancies preceded their weddings. When marriage is in any event to take place soon the situation presents little difficulty except the tax which it may place upon the ingenuity of the doctor who must explain to interested and curious relatives why the baby arrived early. The chief significance of these cases finds itself in the fact that they prove the reality of the problem with which we deal and because they show that none of us, whatever the extent of our self-esteem, is far removed from it at any time.

Cases of illegitimate pregnancy are occasionally seen in children of thirteen, fourteen and more years. Sometimes they have been imposed upon by adults concerning whose moral standards we need waste no words. In any event the child has not reached the age of discretion and cannot be severely condemned.

In every case of pregnancy, whether the mother be wed or not, there is a child in utero. This child is recognized by the law and it is impossible for us morally to ignore its right to consideration. The child is entirely innocent; it had no voice in bringing about the situation

a part of which it is. It is unfair to penalize it for something for which it is entirely blameless. It may also be a potential asset to the state. The history of adoption has abundantly shown that many adopted children grow to be useful men and women. Children born within the bonds of wedlock do not invariably achieve complete success.

Whether the unwed mother comes of a family which is able and willing to stand by her or whether she must receive help from other sources, the problem which she and her infant present is a real one and it must be met fairly, efficiently and understandingly. To say that care extended to these mothers encourages immorality is absurd. Such a statement arises from prejudice rather than from fact. That a young woman would break the seventh commandment lightly because she felt sure, in case anything came of her lapse from moral rectitude, that she would be properly cared for, seems quite impossible for any experienced physician to believe, and, I am sure, will be questioned by any wise social worker.

The first class of unwed mothers should be given efficient obstetric care during pregnancy and labor and until they have recovered. It may be difficult to make anything more of one of these than what she was when the pregnancy began but, is any event, she and her infant are entitled to the essentials of obstetric care. It must always be remembered that although we may in some cases deal with an individual whose worth is not great we are in all cases dealing with a woman and a child. In the second group there is often an opportunity for constructive work. for at least some of these young women may be brought back to real usefulness and happiness. They will often respond very well to a sympathetic and understanding approach. Many of them sincerely regret their error and would welcome an opportunity for restoration to their former status.

The girl in her parents' home presents a problem, which, in my own experience, has always been manageable. If marriage is impossible or is refused, arrangements may be made for obstetric care in a distant city to which the girl may go upon any plausible pretext. I have found it possible to arrange this upon a number of occasions without the young woman being compromised. It requires a family which will stand by her, and in self respecting circles they usually will do so.

The pregnant child, though pregnant, is still a child and must be met with the same wise understanding which would be extended her were she cared for for some other reason. Although statistical studies show that these very young mothers do rather well in labor unless retarded in development or unless some deformity be present it is still essential that care be given in an institution in which the complications of labor may be adequately met. This is so clear that difference of opinion would seem impossible. The young girl, with her life still to be lived, usually a victim of surroundings rather than of any innate wickedness, which at such an early age will scarcely have become apparent even if present, should be placed where expert care may aid her to emerge from her delivery with as little physical damage as possible. It is equally important to save her from as much psychic injury as may be, to keep her from the feeling that she is condemned by everyone. Anything less than this seems a serious deviation from rudimentary humanity.

Often the first problem with which the obstetrician must deal when he sees an unmarried woman in early pregnancy is that of abortion. Many young women feel that the termination of the pregnancy is the easiest way out. It is difficult for some of them to understand why this cannot be done and in some instances they have been urged to take this course by the man concerned who is quite willing to secure his own release from embarrassment by a procedure all of the risk of which is borne by her. The physician has a double duty. First he should explain to the young woman that abortion, unless done for the unquestioned purpose of saving life, is an illicit operation and that, therefore, if she persists in having it done, it must be done by an irresponsible practitioner outside the ranks of respectable medicine. This brings with it an unquestioned risk to her life or health. She should be told that many women who have been aborted and who have apparently recovered without real trouble have been made sterile for the rest of their lives. She should also be made to understand that the commission of another wrong is never a good way to right a wrong already committed and that an abortion, which

involves the destructon of a life, is a greater wrong than the original error. It should be made clear to her that the infant, for whose presence in her uterus she is at least in part responsible, deserves fair treatment and that she has no right to deprive it of its life merely to save from embarrassment herelf and the man most concerned. All this takes time, patience and repeated explanation but it can be best done by the physician, who, if he has a sense of social responsibility, will be glad to help the young woman to a safe, sane and proper adjustment of her problem. After all, there is more to the complete fulfillment of professional responsibility than the mere carrying out of a certain number of technical procedures.

After having dealt with the social aspects of the case—and the physician should have at least an active interest in these—the question of prenatal care and care during labor comes up. In most cases these are best managed in a hospital, the prenatal observation in the out-patient department and the delivery and puerperium in the institution itself. Hospitals should recognize their responsibility. No one institution should be expected to carry too great a part of this burden but each one should do its share. To admit and care for the criminal who has been shot while resisting the police and to care for him is entirely proper. He should be adequately cared for and when well should be brought up for trial. But that the unmarried mother should be refused hospital care can only be explained as the expression of a narrow and unsocial prejudice. Fortunately this attitude is practically non-existent today among the better hospitals. I am sure that failure to provide proper care for the unmarried mother will not decrease the number of pregnancies in unmarried women and I am equally sure that it will increase the number of criminal abortions. I think I speak for the great majority of the men in the specialty of obstetrics and gynecology when I say that we believe that the unwed woman should be cared for during labor just as any other woman is. To revert to the example of the criminal, if he is to be operated upon, it will be done with the same care and with the same relief of pain as though he were an exemplary citizen. Some years ago a lady, who must have been one of the virulent reformer type, visited the obstetric clinic of a great university in the eastern part of the country. The famous professor who then headed the clinic showed her about. As they went through the hospital she turned to him and asked, "Do you have any unmarried mothers here?" He replied that they did. "I hope you don't give them any anesthesia. I hope you let them suffer as much as possible," said the visitor. The professor, whose mind and soul were as great as hers were narrow and who could speak plainly when he desired, returned a reply which left her in no doubt as to his opinion of her. Labor is not a punitive process. Social adjustments may be made after the woman and her child, and the child is an entirely innocent party, have been safely carried through it. As the mother must in many cases return to some form of employment as soon as possible after labor she should be helped through it in as good condition as posible. Indifferent obstetric care does not seem appropriate.

The normal puerperium requires eight weeks for its completion. No plans for return to work should be made earlier than this. If the young woman obtains employment in a place where her previous history is not known and no particular interest is felt in her, an inability to do a full stint of work might jeopardize her position and explanations might be fatal. The final disposition of the child is a problem which is not primarily medical but in which the physician can scarcely help being interested. A discussion of the question would be outside the scope of this paper but it is very significant that social workers of the greatest experience are coming to the view that an iron-clad compulsion of the mother to keep the child has not been found to be wise and that each case should be judged on its merits. To the physician this seems sensible. The girl who earns low wages can often just support herself. To provide proper food for an infant and care while the mother is absent at work is impossible. An arbitrary insistance, regardless of circumstances, that the mother keep the child seems unjust as it may condemn the child to insufficient feeding, poor care, illness and perhaps early death. If the mother is able to give the infant what it needs and wishes to do it, of course she should be encouraged to do so.

The attitude of the doctor toward the unmarried mother, then, is one of complete sympathy.

He regrets her error and would like to see her returned to the ranks of honest women, from which she may perhaps later establish a home of her own, or in which, at least, she may find work by which she may earn her maintenance. He would insist that during her pregnancy, labor and recovery she should be treated as any woman should be at such a time. A sincere effort should be made to return her to activity in as good physical condition as possible. An equal effort should be made to bring her through the experience with as little damage to her spirit and womanly pride as is possible. He will be glad to do his part of what he regards as a process of rehabilitation and not as an incident which is to afford opportunity for the exhibition of petty authority. All of these women cannot be made into useful members of society but enough of them can be to make the effort well worth while. Our aim should be restoration, as far as is possible, of physical and spiritual health.

ALLERGIC COMA DUE TO AMYL NITRITE. CASE REPORT

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History. H. T., female, aged 52, white, married, was referred to me by her family physician for intractable asthma of seven years' duration, following a radical sinus operation. The attacks occurred perennially, aggravated by extremes of heat and cold, worse at night, and requiring hypodermics of epinephrine several times daily. The nasal breathing was continuously obstructed. She had attended various clinics and hospitals without benefit, and was unrelieved by climatic changes. She had had various nasal operations following the radical procedure. In 1926 a tumor of the spine was removed. A son has sinusitis, and another child died of influenza. A sister is an asthmatic and sensitive to aspirin.

Physcial. At the first examination the patient was markedly dyspneic. Polypi occupied both nostrils. The pharynx was atrophic. An emphysematous chest with the classical findings of asthmatic bronchitis was present. The heart sounds were feeble, but regular. A scar of the previously mentioned spinal operation extended on the lumbar region. The blood pressure was 142/98 mm. Hg. Weight 97 pounds, temperature, 98.4 F. by mouth.

Allergy Study. A thorough allergy study was made, comprising a specialized history, complete sensitization tests by the scratch and intracutaneous routes, elimination diets and environmental procedures. This resulted in a diagnosis of extreme aspirin, pyramidon, sodium nitrite and nitroglycerin sensitivities in addition to the asthmatic bronchitis and nasal disease of bacterial origin.

The Coma. While some autogenous extracts were being prepared for the patient at the conclusion of her allergy study, her family physician excitedly phoned me one day, that following several injections of epinephrine at home, to control the intractable asthma, she suddenly became comatose. Her respirations were eight per minute; intense cyanosis developed. The pulse was rapid and feeble. Soon the patient was pulseless, and respiration apparently ceased. Resucitative measures were employed (oxygen, parenteral stimulants) for 1½ hours with a gradual return of respiratory and cardiac action. The coma, however, persisted in varying intensity for 48 hours, after which it disappeared with the gradual return of all bodily functions to normal.

Laboratory Data While in Coma. Urine showed moderate amount of granular casts. Blood Wasserman negative; leucocytes 9,400, polys. 82, lymphocytes 13, eosinophiles, 5, hemoglobin 75 per cent., r. b. c. 4,200,000. Blood chemistry, urea nitrogen 31, creatinin 1.4, sugar 105. Radial pulse varied from pulseless to 88 to 150. Spinal tap negative. EKG, auricular rate 105, ventricular rate 105, low voltage Q.R.S. Another examination showed auricular rate 90, ventricular rate 90, P-R interval .16; lead one, slightly depressed T-wave. The interpretation was "probable left ventricular weakness with so-called cardiac asthma; the present attack may have been due to coronary disease."

Further Observations and Diagnosis. Approximately 48 hours after the sudden onset of the coma, the patient gradually returned to normal. What was the cause of the coma? The history was rechecked, and a very interesting factor was then learned that was not previously obtainable in the history. It was this—just before the coma, the severe asthma was not responding to repeated injections of epinephrine, as she had become epinephrine fast. The blood pressure had risen to over 200 mm. Hg., the physician became alarmed, and thought he would try an ampoule of amyl nitrite by inhalation. Immediately she lapsed into the coma already described.

COMMENT

Drugs as a cause of untoward symptoms in allergic individuals are well known to the allergist and the experienced physician. Severe reactions, even death from aspirin have occurred.[1] Furthermore, different systems of the body may express themselves in this sensitivity, and the nervous system as a location of diversified allergic manifestations is being recognized more widely.[2-3-4]

In this case, we have an asthmatic intensely sensitive to drugs evidenced in the respiratory, circulatory and nervous systems, inhaling amyl

nitrite, and promptly developing a two-day undiagnosed coma.

Ordinarily, amyl nitrite,[5] after the inhalation of a few drops, produces flushing of the face, fulness and throbbing in the head; some headache and confusion is often present, the pulse is accelerated, and the respiration is slightly quicker and deeper. This passes off in a few minutes. In this instance an allergic patient went into a coma of 48 hours' duration after its use. As a result, the importance of a detailed allergy history, from members of the family, in the differentiation of the already multitudinous causes of coma is necessary, as an aid in its differentiation.

CONCLUSION

When dealing with an allergic individual, particularly one sensitive to drugs, prolonged coma may result from a medicine. In this case it was amyl nitrite. Therefore, in a differential diagnosis of coma, drug allergy should be considered.

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THE EFFECTS OF DRUGS ON INTELLIGENCE

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Drugs are chemicals which in the last analysis bring about certain alterations in the chemical composition of the blood fed to the brain. By effecting these chemical changes, which are quite considerable, intelligence may be increased, decreased or perverted.

Most interesting are the recent studies on the effects of benzedrine sulphate (benzyl-methyl-carbinamine sulphate) on intellectual activity. Drs. Molitch and Sullivan evaluated the effects of benzedrine on a group of 96 boys, aged ten to 17. The New Stanford Achievement Test was given to these boys. A week later the same boys took the test again about 1½ hours after 50 of them had received ten milligrams of benzedrine tablets and the remaining 46 had been given a tablet that looked the same but contained no drug of any kind.

The results were most interesting. The 46 boys who received the drugless tablet scored a net loss of 29 points, while the 50 boys on benzedrine scored a net gain of 63 points, although 26 of the 50 did not show any noticeable improvement. Some weeks later these 26 received 20 milligrams (or double the previous dose) for a third test. Twenty-four of these boys, or 92 per cent, improved their scores with a net gain of 117 points. The greatest responses were noted in language usage, geography, physiology and hygiene, and arithmetic. Normals of average intelligence and feebleminded boys responded better than normals of inferior intelligence. Grouped according to academic age, it was found that the boys in junior high school showed greater improvement on benzedrine sulphate than those in lower grades.

Also to find benzedrine sulphate of value as far as mental activity is concerned were Drs. Gwynn and Yater who administered this drug to a group of 147 normal medical students. Half the group received ten milligrams of benzedrine after breakfast and again after lunch for three successive days, the other half receiving lactose, or milk sugar. Five days later the procedure was reversed, so that the entire group was tried on both benzedrine and on the placebo, milk sugar.

One hundred and thirteen, or 77 per cent experienced a temporary increase in energy while on benzedrine sulphate, 72 or 49 per cent reported temporary exhilaration, and 61 or 41 per cent found that benzedrine increased their power of mental concentration, while eight or five per cent thought that their power of concentration was decreased.

An interesting series of studies on the effects of various drugs on the circulation of the blood in the brain was conducted by Drs. F. A. Gibbs, E. L. Gibbs and W. G. Lennox. They found that certain drugs caused an increased flow of blood to the brain and hence increased mental activity. Other drugs had just the opposite effect. An intravenous injection of adrenalin chloride caused a marked increase in the blood flow to the brain. Inhalation of amyl nitrite also caused an increase in blood flow. An intravenous injec-

tion of sodium benzoate caused a decreased flow and reduced mental activity.

The effects of all these drugs are temporary. While drugs may have pronounced effects on the processes of thinking and reasoning they do not, as far as is known at the present time, bring about permanent changes.

Drugs may also cause the thinking apparatus to go awry. Mescaline is one of the most interesting of these drugs. When taken into the body it does queer things: it opens up new and strange channels of thought and sensation.

Dr. Erich Guttman, of the Maudsley Hospital, London, England, determined to find out just what mescaline would do to the mind. Into the clinic came sixty persons of sound mind who were willing to cooperate with him to learn what effects this strange drug exerts on mentality.

The drug was given either by mouth or injected by means of a needle. In a short time strange things began to happen. The special senses became perverted: things tasted, smelled and looked different. One of the subjects found that a glass of water smelled like paraffin. Familiar voices acquired strange qualities, they became loud, shrieking and terrifying. Objects felt too hard or too soft. Metals seemed flexible like wax.

Most striking were the sensations of one's own body. Thus one subject remarked: "There was a funny sensation in my right hand. If I looked at it and observed its normal shape I had, nevertheless, the feeling that it was huge and inseparable from the surrounding space." Another remarked: "Gradually the feeling of body vanished, the position of the limbs could not be localized; the posture of the body could hardly be determined; it could scarcely be separated from its surroundings." A remarkable description was given by still another: "Involuntarily I paid attention to the position of my limbs, which I perceived in an unusually clear and distinct way. I felt my body particularly plastic and minutely carved. At once I had a sensation as if my foot was being taken off—then I felt as if my head had been turned by 180 degrees. My abdomen became a fluid, soft mass, my face acquired giant dimensions, my lips swelled, my arms became wooden, my feet turned spirals and scrolls, my jaw was like a hook and my chest seemed to melt away." Another reported: "To my great surprise I realized that I had no head, but in its place a sheet of ground glass, such as is used in a camera as a screen. Where my ears were, was an insoluble mystery; I could not find them, so long as with open eyes I followed and controlled the movements of my searching hand. I was unconscious of the position of any part of my body."

Visual hallucinations were common, as they always are when thinking becomes perverted. There were strange visions, weirdly beautiful colors, lights and flashes. Here is how one mescaline-intoxicated subject saw the world: "The visions began. I saw them when I closed my eyes, and especially when with my hands I shielded my closed eyelids from the light—never with my eyes open. At first they were no more than indefinite, white clouds moving on a dull black ground. Soon they became clearly defined, and resolved into an interlacing pattern of white lines. The background became a deeper and richer black, the lines themselves were exquisitely sharp, fine and delicate. I saw a human eye, some faces traced by the lines in their earlier stages, but for the most part the rich black ground was covered with meaningless arabesques, never still, crossing and interweaving in an endless flow. Every line was duplicated, its outline repeated again and again, growing at each repetition fainter until, infinitely multiplied, it receded into eternity. New color entered upon the scene. The white lines turned to yellow and orange, thickening until broad patches of brilliant color glowed against the black, always beautifully defined. Other colors appeared, a superb emerald green, iridescent as a humming bird's wings, red like the sound of a trumpet, a flaming orange, a vivid purple."

A more complex visual hallucination was experienced by another patient in this unusual experiment. He was possessed of greater imagination. This is what he saw: "I was transported a thousand miles away from the surface of the earth. The distance I knew to be exactly a thousand miles. I was looking at the heavenly body, which was glowing like an iridescent plum-pudding suspended in the sky exactly a hundred miles above the earth. It had became the source of the lightning. The surface of the earth was corrugated by three chains or rather massifs of snow-clad mountains. There were three continents, and it was a matter of cosmic importance on which of these three massifs the lightning

would strike. For in that continent civilization would be kindled. The surface of the three continents, their snow-clad mountain ranges, became lit up with innumerable pinpoints of white pointed flame which seemed to be beckoning to the lightning to strike them. I looked up at the heavenly body and saw, with a mixture of surprise and a sense of inevitability of the event, that it had changed into a sun god. This was a sort of Aztec figure, whose head was set in a halo of waving plumes of light which I connected somehow with the tails of flagellosperms. When I looked down on the earth again I saw that the surfaces of the mountain ranges were no longer covered by beckoning flames, but by innumerable pairs of white uplifted arms, stretched towards the Aztec figure in the sky. I looked again at him to see how he was proposing to respond to these supplications and was surprised to see that he had changed into Dr. N. who was at the same time, God. He seemed about a mile high, and I saw him in profile, dressed in a long white robe or toga, like Caesar, participating in a triumph—a wonderfully majestic figure. In his extended right hand he held the lightning in a flickering sheath of electricity."

The time sense is also upset during mescaline intoxication. This is how it feels, as described by one of the subjects. "Time seemed to stand still. I had a feeling of relief when I heard that it was five minutes later. I was dreadfully impatient. I was the more embarrassed that it was impossible for me to follow the small hand of the watch. I drank a spoonful of soup, looked around me, and looked down again at my plate; it had been in front of me for hundreds of years. But my movements and the conversation at the table, were slower than in normal life. They appeared somewhat accelerated. I must have kept everyone waiting—that was my first momentary thought. Then I realized that it was true they had been waiting aeons, that it could not have been true; and in fact, of course, was not true."

Another interesting phenomenon was the irradiation of sensations from one sense to another. This was described as follows: "When I closed my eyes, I saw lovely lines and patterns. They began to move to the rhythm of the radio outside. With the deeper tones the colors changed into blue and black, the lines became greater and more compact, the rhythms quicker. When the music became louder and lines and colors vivified, the movements became more complicated, and the colors changed towards yellow. If there were pauses in the music, or if the door banged, the whole picture stood still, a bright yellowish-red flamed up, which slowly turned into darker shades, and then the rhythmic movement went on."

Derealization, a feeling of the unreality of things, was another experience felt by those who submitted to the influence of mescaline. Said one: "The whole surroundings appeared to me as if I were returning after a long absence to a room which had previously been very familiar to me, but where now all the objects were as if they had become quite strange and were saying: 'Go away again; you will not find your previous relationship to us: you are quite strange and altered.' During the whole experiment all things and sayings of the persons around me were absolutely unintelligible to me, like the rules of a strange game. My parents were so incredibly far away, so detached—all friends, acquaintances, relatives were at a far distance."

What happens when such persons are gifted- In literature they become the Gertrude Steins, in music the Schoenbergs, in art the Dadaists and Surrealists. To a physician trained in mental phenomena the products of these so-called ultra-moderns are definitely pathological, certainly not artistic. *

The literary efforts of Gertrude Stein are nothing more than a logorrhea, a meaningless, repetitious flow of words, when the inhibition center is abolished. The music of Schoenberg and other ultra-modernistic composers is a setting down of a confusion and bable of sounds, meaningless and unrelated. The art of the Dadaists, and particularly of the Surrealists, is a recording on canvas of a disturbed intelligence.

Here, for instance, is a picture by the Surrealist, Dali. The picture depicts a naked woman reclining with head bent, her fair falling directly over her shoulders; she rests on her right muscle-bound arm, the left outstretched in a gesture of repulsion. One drawer grows out of her chest. Two drawers with knobs from her breasts, with one drawer below out of which drops a bit of rag. Two more drawers grow out of her stomach. In the background two smaller female figures sprout similar drawers as they sit on a chair of drawers.

Another picture by Dali called the Persistence of Memory depicts three watches—two made

of silver and one of gold—each limp and undulant, one draped about an unknown creature in the foreground, another hanging from a tree, folded in the middle and the third resting on its undersurface on the edge of a table, the upper portion forming a right angle with the lower. In other words, these metals have acquired wax-like consistencies, precisely as was described by the mescaline-intoxicated patients of Dr. Guttmann.

Disturbed and awry thinking is often the result of chemical reactions within the brain. This is a fact which can no longer be disputed. This disturbed function may be the result of drugs or of abnormal chemical produced within the body.

There is still another phase of chemicals and their relation to artistic creation and superior brain power. Many fascinating observations have been made between genius and certain unusual factors. For instance, the poisons of tuberculosis have been found to play a very important role in the lives of many geniuses, notably Stevenson and Chekov. Alcohol and drugs have also exerted an undeniable influence on the genesis of unusual talent.

History tells us that civilization first arose in the northern hemisphere where it grew steadily and healthfully and sturdily in close association with the peoples who inhabited the northern hemisphere. These peoples seemed, for the most part, to be a alcohol drinking lot. On the other hand, civilization lagged woefully behind in the southern hemisphere where alcohol was, for the most part, an unknown quantity. In the same way the non-alcohol drinking Gauls were unable to resist the alcohol drinking and conquering Romans. Gaul was dry; Rome was wet. Gaul was feeble and uncivilized; Rome was mighty and the center of civilization in those days. But during the tenth century civilization in the Rhine country began to rise rapidly. Alcohol had been introduced by the conquering Romans and found desirable.

In the East a similar thing happened. When the Moslems drank wine the Golden Age of Eastern civilization was in full bloom. The immortal Arabian Nights were written; mathematics was at a high stage in its development; medicine and the sciences made great progress. However, after the 15th century when strong-willed fanatics got the controlling hand and prohibited the use of alcohol as a beverage and turned the Moslems into a coffee drinking people, civilization began to set in the East. In fact, so stupid had the Moslem coffee drinkers become that they had to employ the alcohol drinking Copts to keep their accounts in workable condition.

In later years historians observed that the rise of the Dutch Republic was strongly coincident with the universal adoption of widespread drinking of gin. With increasing popularity of the ethylic fluid religious and political freedom became actualities. The arts and sciences began to flourish, and many important enterprises were undertaken.

The same is to be said for the brilliantly intellectual Elizabethan period in English history, when booze flowed freely and England produced her most interesting men and women. When the neighboring Scots adopted the use of whisky in the 18th century there followed almost at once the rise of the Caledonian peasantry.

The great races of mankind were invariably those who knew alcohol well. The same is true of the great men of mankind.

It has been said that when a man becomes drunk he gains possession of himself. He need not necessarily get drunk. He need only abolish the thousand and one inhibitions that bind him down. When inhibitions are abolished his native mental and physical energies rise to the surface. This is not only true of one man but of whole races of men.

Plato, who loved his alcohol well, wrote a very striking tribute to it in his Republic. He conceived of human beings as creatures chained with their backs to the light. Behind them moved many creatures whose shadows on the wall was all they were able to see. To the chained beings these shadows were realities. What was required more than anything else by these chained beings was something that would set them free of their chains so that they could turn around and see the realities of life. Alcohol was that freedom bringer. It abolished the inhibitions and enabled men to see things as they really are.

Most of the great of mankind were lovers of alcohol. In the dawn of Chinese civilization, the poet Li Tai-Peh sang her sweetest songs and drank freely of soy bean wine. During the sixth century before Christ some of the most delightful poetry was written by Anacreon who derived most of his inspiration from alcohol and in appreciation dedicated some of his best odes to it.

Aeschylus, the greatest of Greek dramatists,

wrote his immortal tragedies when liberally supplied with alcohol. Similarly, Eupolis and Cratinus would not lift a pen unless they had several goblets of wine. Homer drank and praised alcohol because of "the spirit it brought, to dare things high, and set up on end my thoughts."

The Latin poet Horace said that the elder Cato attained his greatest eloquence when he had been thoroughly warmed by wine. Catullus certainly drank wine freely, and Ovid and Seneca did not conceal their great love for alcohol.

The immortal tent-maker and poet, Omar Khayyam, author of The Rubaiyat, did not hesitate to confess his love for wine. When asked what his king might do for him he replied: "Place me where wine in abundance may inspire my muse." He was accordingly pensioned and sent to Naishapur where he found wine in magnificent abundance.

Another poet, Chaucer, loved wine not a whit less. His greatest work was done under its influence, and he did so well that the king granted him a daily pitcher of wine to maintain his excellence. This he did to such perfection that the king granted him a tun in 1398.

Robert Herrick's poetry took flight on wings of alcohol. Ben Jonson, the first of the Poet Laureates of England enjoyed his canary wine so well and with such excellent literary results that the king made a tun of canary wine the yearly gift to his Laureate. The Laureates who followed Johnson: Davenant, Dryden, Shadwell, Tate, Rower, Eusden, Whitehead and Wharton enjoyed the kingly gift and derived their poetic inspiration from it. To this day, the tun of canary wine goes with the poet Laureateship of England in order to insure literary excellence.

The greatest of all Elizabethans, William Shakespeare, not only adored alcohol, but also gave it a place of prominence in his immortal dramas. Some of his greatest creations were habitual drinkers: Falstaff, Caliban, Sir Toby Belch. And Beaumont, Fletcher and Hogarth in addition to other Elizabethans were great men as well as great drinkers.

The greatest of all Spanish writers, Cervantes, admitted without blushing, "I can no more give up drinking for pleasure than if I had been born for nothing else." His greatest masterpiece Don Quixote, was written when thoroughly inspired by alcohol.

The polished English essayist, Addison, kept a bottle of wine at each end of the long gallery at Holland House. Here he was in the habit of walking back and forth while writing his essays. Every once in a while he would pause and take a drink of wine to aid his thoughts. This he would continue till he attained the proper degree of exhilaration, when he set his thoughts down on paper. His neighbor, Alexander Pope, drank with him as well as with Dryden, Swift and Steele. A most merry and excellent company of men whose best work seemed to have been accomplished when their blood had been thoroughly warmed by alcohol.

Another of the immortals in English letters, John Gay, who by writing the Beggar's Opera, invented comic opera, discovered at the age of 22 that wine had the fascinating quality of aiding his poetic composition. He was not long in discovering that under the influence of alcohol he was able to produce his best work. When he ceased drinking alcohol his productions also waned. This he soon realized, for in 1730 he wrote to Swift: "I continue to drink nothing but water, so that you cannot require any poetry from me."

This was also true of Swinburne, for when he finally ceased to take alcoholic drink his productive power failed him. Oscar Wilde ascribed all his brilliance to alcoholic beverages, as did Goldsmith. Smollett drank like a fish and insisted that his friends do likewise. His contemporary, Fielding, had the most unhappy and unhealthy habit of chewing tobacco while he drank champagne. Yet this did not seem to have any ill effects on him.

Burns wrote his poetry "by the lee side of a bowl of punch, which had overset every mortal in the company except the hautboy and the Muse." Richard Sheridan could not put pen to paper unless his spirits had been loosened by wine. He would not attempt to make a speech unless he had swallowed a tumbler of raw whisky. Lamb was constantly under the influence of alcohol. He seemed to be particularly fond of gin and water.

Moore, the Irish poet, drank alcohol consistently and loudly sang its praises in his poetry. Hazlitt, the great English essayist, became dull like Swinburne had when he gave up his alcohol. When he drank, his spirits were high and he did his best work. Byron wrote and drank at the same time. His masterpiece, Don Juan, was com-

posed while Byron was under the influence of gin. Similarly, Thompson said that, "he was dull until excited by wine."

One of the greatest of all American writers, Edgar Allan Poe, was addicted to alcohol and was quite notorious during his lifetime for this failing. Yet his greatest creations came into being when he was inebriated. Walt Whitman tells us that he turned out his poetry "with the help of a bottle of port or what not." During his early years when he did not drink his literary productions were rather mediocre. But after he had become acquainted with alcohol his work improved decidedly.

Within more recent years Jack London confessed that he could not work without alcohol. "I took my drink, at once my brain loosened up and began to roll off the words." The late novelist, Harold MacGrath, stated quite frankly that he doubted if any teetotaler had ever written a great book, painted a great picture, or composed a masterpiece in music.

Many of those addicted to the use of drugs claimed that they could work best when thus artificially stimulated. Emerson knew that quite a few literary geniuses were in the habit of seeking inspiration in drugs. It was his opinion that drugs actually gave no inspiration. It was not inspiration, he insisted, but "some counterfeit excitement and fury."

To a lesser extent certain of genius have been addicted to the use of drugs, notably opium and its derivatives. Among those who are known to have been addicted to some form of drug were Coleridge, De Quincey, James Thompson, Poe, Swinburne, Rossetti and Francis Thompson.

Some of the work of these men show evidence of drugged inspiration. Coleridge's Kubla Kahn, as well as his Christabel, are works written by a mind exhilarated by drugs. Edgar Allen Poe's The House of Usher, is another literary masterpiece which gives unmistakable signs of drug-inspiration. Similarly, The City of Dreadful Night was composed by Kipling when his senses were sharpened by artificial stimulation.

It is now quite certain that drugs modify the quality of the blood fed to the brain. Mental activity may be modified by these chemicals either heightened to greater production, decreased in the quality of thinking, or cerebration may be distorted entirely.

HISTORY OF RADIUM THERAPEUTICS

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Radio Active Substances. The discovery that there are substances in ores which spontaneously give off energy in the form of radiations was due to an accident.

Professor Henri Becquerel, of Paris, was experimenting with the effects of sunlight upon some pieces of ore which contained the element uranium, a metal which had long been known.

One cloudy day, he laid the ore away in a dark drawer, thinking to continue his experiments on the first sunny day. He accidentally put the ore on a photographic plate which was wrapped in a light proof envelope. Several days later he developed the plate and found to his surprise that it showed a very dark spot where the ore had lain.

He then found, by further experiments, that the ore acted on a photographic plate, even though a thin layer of silver was put between the plate and the ore.

Continued experiments convinced him that the uranium in the ore was responsible for these effects. He therefore rightly believed that he had discovered a new property of matter. This property he called radio-activity. Becquerel announced his discovery to the Academy of Sciences in Paris on February 24, 1896.

Soon after the discovery in 1896 of the radio-activity of uranium M. and Mme. Curie found that thorium, a well known metal used in the manufacture of Welsbach gas mantles, had radio-active properties.

After the discovery of the radio-activity of thorium, M. and Mme. Curie found that pitch-blende with which they were experimenting showed a greater degree of radio-activity than could be accounted for by the presence of either uranium or thorium. They assumed, therefore, that there must be some unknown radio-active substance in the pitchblende.

Their labors finally resulted in the discovery, 1898, of an element that was several million

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times as radio-active as uranium and this they called radium.

Other radio-active elements were soon discovered by different scientists. Altogether, more than 30 elements with natural radio-active properties are now known, but of all these radium is the most important in medicine.

Sources of Radium. In addition to its occurrence in various ores, radium in the most minute quantities has been found in all parts of the Earth's crust. Scientists have detected it in very small quantities in volcanic rocks and in sea, river and spring waters. At the present time the main source of radium is pitchblende.

Formerly the American supply came from carnotite, a yellowish ore, looking not unlike sandstone. Large deposits of carnotite have been found in Colorado and Utah.

Radium may be extracted from pitchblende much more easily and economically than from carnotite. Rich deposits of pitchblende have been found in the Belgian Congo.

The richest and most extensive deposits known have recently been found in Canada.

Chemical Properties of Radium. Radium is a metal (symbol Ra) and is closely allied in chemical characteristics to barium and the alkaline earths.

When radium is first extracted from carnotite or pitchblende, it is usually obtained in the form of radium bromide. From this salt all of the other salts (radium chloride, sulphate, carbonate, etc.) may be made. Radium bromide and chloride are soluble, while radium sulphate and carbonate are insoluble in water.

Radium bromide is a white powder, looking not unlike powdered sugar.

Radium sulphate looks like yellowish sand.

For some years after its discovery radium was known only in the form of one of its salts.

In 1910, Mme. Curie and Debierne isolated the element radium and found it to be a white solid metal with a glistening look, like that of a freshly cut piece of lead.

For use in medical treatment, radium sulphate is commonly put in tiny glass tubes measuring about ½ inch in length and $\frac{1}{10}$ inch in diameter.

When radon, a gas derived from radium, is used, it is pumped off from a solution of radium chloride in water.

Radon. All scientists now agree that radio-activity is a spontaneous process of atomic transformation. In other words, the rays that are given off from radium are the result of a rapid disintegration or "explosion" of its atoms. New substances are thus produced. These new substances transform themselves in turn until at last a stable substance is reached.

If a quantity of radium sulphate is sealed in a tube, the first change that takes place results in a gas called radon.

Radon changes quickly into a solid known as Radium A. This by no means ends the process. Radium A changes into Radium B and this in turn changes into Radium C. These three substances—Radium A, B and C—are deposited as a thin invisible film on the walls of the tube. Still other changes take place. Radium C turns into Radium D, Radium D into Radium E, Radium E, and Radium F into Radium G. (The actual changes are a little more complex than we have indicated.) The last substance—Radium G—is a solid stable substance, which is almost identical with ordinary lead.

Radium depreciates by one-half in 1,760 years.

In other words, if one has 1,000 milligrams (about 15 grains) of metallic radium, one-half of it will have spontaneously disappeared in 1,760 years.

Extraction of Radon. If a quantity of radium chloride is dissolved in a bottle of water, the gas known as radon can be extracted from the bottle by a suitable apparatus. If the radon is then purified, concentrated and sealed up in a small capillary glass tube, the series of changes just described; i.e., from radon to Radium G, will take place even though no radium is present in the tube. As a result of these changes ("explosion" of the atoms) rays are given off from a tube containing radon gas exactly as if it contained radium.

While radium has, for all practical purposes, always the same strength; i.e., it gives off constantly the same quantity of rays, radon gas depreciates at the rate of approximately 16% every 24 hours.

In about thirty days, the tube of radon is practically exhausted, because nearly all of the

radon gas has changed into Radium A and there is of course no radinm in the tube to furnish more radon.

A certain amount of radium gives off a definite amount of radon gas each minute, hour or day.

For example, if one has 1,000 milligrams of metallic radium, there may be extracted from it in 24 hours 160 millicuries of radon gas. The millicurie is the unit of measure used in speaking of radon and under certain conditions of filtration is equal in radiating power to one milligram of metallic radium.

The radium chloride from which radon gas is to be extracted is dissolved in about four ounces of water. Usually there should be in the solution used for this purpose from 1,000 to 2000 or more milligrams of radium element. The bottle containing the radium solution is kept permanently in a safe.

From this bottle a glass tube, several feet long, extends through the safe to the outside and is connected with a special mercury pump system.

Each day, after a pumping and purifying process lasting several hours, the radon gas is concentrated and sealed in one or more small capillary glass tubes. These tubes are about ¼ inch long and about $\frac{1}{50}$ inch in diameter. They are at once put into smaller silver tubes to prevent breakage. At the end of about three hours, when they have gotten their greatest strength, the tubes are measured by means of the electroscope.

The tubes of radon gas may be used exactly as if they contained radium, with the exception, as we have already said, that regard must be paid to the fact that they diminish in radiating power approximately 16% each 24 hours. Standard tables facilitate the calculation of the decay of the radon.

When one speaks of "surface radium treatment" it is implied that either radium or radon is used.

When "radium puncture" is spoken of, it is evident that if radium is in the needles or "seeds" implanted in tissue, these must be withdrawn when the calculated dose has been given.

If radon is in the needles or "seeds" these may be withdrawn or allowed to remain in the tissue, depending on the type of container.

In our practice, lead radon "seeds" are used for "puncture," these being allowed to remain permanently in the tissues.

The radiations. The rays from radium and its associated disintegration products are of three types, known as the alpha, beta and gamma. The alpha rays are positively charged helium atoms traveling with velocities up to several thousand miles per second. These particles never escape from the glass tubes in which the radium or radon is sealed.

Beta rays are electrons; some of the faster beta rays have velocities almost as great as that of light. The gamma rays are not particles but are of the electromagnetic type, being similar in character to ordinary light and x-rays.

The gamma rays are distinguished by the fact that their wavelength is very short; some are shorter than the hardest x-rays so far produced. The gamma rays are of the most importance in therapy, due partly to their great penetration. In certain cases, however, the beta rays play an important role.

Historical Note. Wickham and Degrais of Paris were among the first to employ radium as a therapeutic agent.

Beginning its use in 1905, they finished the manuscript of their work—Radium Therapy—in 1909 when the French edition was published.

In North America, Robert Abbe of New York was among the first to use radium as a therapeutic agent.

His earliest paper, "Radium in Therapeutics," was published in 1904.

In Chicago, F. E. Simpson began to employ radium in 1911, this probably being its first use in Illinois. Simpson's "Radium Therapy" was published in 1922.[1]

Literature. The literature on Radium Therapy is voluminous but confusing. One who tries to cull from the mass of literature a concrete idea of when and how to use radium finds himselve involved in a maze of contradictory opinions and methods.

Principles of the Use of Radium in Tumors. Only those tumors are amenable to radiation in which the radio-sensitivity of the tumor is greater than that of the surrounding structures so that resolution of the tumor may be accomplished with preservation of the tumor bed.

An exception to this statement is seen in the action of radium on uterine "fibroids."

Here the effect in shrinking the tumor is indirect, the action of the radium being chiefly on the endometrium and blood vessels of the uterus rather than on the tumor itself.

In tumor therapy radium affects 1. the tumor cell. 2. the tumor bed.

1. *The tumor Cell.* The chief point of attack of the rays is the tumor cell, particularly its nucleus. The cell is especially vulnerable during its mitotic phase.

Radium may cause (a) autolysis—a gradual molecular disintegration of the cell. (b) Caustic destruction of the cell as when radium is inserted into a tumor. (c) Growth restraint—which may occur in certain tumors that exhibit a degree of radio resistance.

2. *The Tumor Bed.* The chief effects on the tumor bed are the obliteration of blood vessels; stimulation of phagocytosis and increase of fibrosis, processes that play a far-reaching role in the cure of malignant tumors.

Surgery Versus Radium

In a paper published a few years ago, the late E. Starr Judd said that, while he did not make great claims for the cure of cancer by surgery, he did believe that surgery had done more for the cure of malignant disease than all other methods combined. Few would deny the truth of this statement.

When to Use Surgery and When to Use Radium

Operable Tumors. We have always held the opinion that, with certain exceptions, operable tumors should be operated on.

Inoperable Tumors. Inoperable tumors may be treated with radium. There may be some differences of opinion as to what is operable and inoperable.

Some estimate that from 50% to 60% of malignant tumors seen by the surgeon are inoperable.

Should Operation Be Performed and Followed by Radium?

In some cases, as in breast cancer, complete surgical excision is the best procedure available. Many believe pre-operative and post-operative irradiation is a valuable adjunct.

In cancer of the skin, lips, oral and pharyngeal cavities and the cervix uteri, we do not advise operation prior to radium.

The objections are twofold: First, unless every cancer cell is removed, local growth may be stimulated and metastasis favored. Second, operations that injure the tumor bed make the successful application of radium more difficult. Radium has its best effects only when the tumor bed is conserved.

How to Use Radium

While good results may be achieved by different technics, we wish to point out what we believe to be the best methods and to warn those who undertake radium therapy of the dangers and disasters that lurk in some of the methods recommended in the literature.

Surface Applications of Radium Versus Radium "Puncture"

We believe surface irradiation is the method of choice and that no case should be subjected to radium "puncture," which experience has shown can be treatedf efficiently by surface irradiation.

In our practice we limit the use of radium "puncture" with rare exceptions to cancer of the tongue.

Radium Dosage

In practice the toleration of the skin is the usual factor that limits the amount of radiation. In malignant tumors, one endeavors to give the tumor the dose that the surrounding normal tissure will tolerate without serious impairing its integrity.

No one can predict with certainty the exact dose needed to cause resolution of the individual tumor.

Unfortunately, there is no definite "carcinoma" dose.

The Skin. The use of radium in diseases of the skin has been discussed fully in a previous paper.[2] Surface irradiations should be used in disorders of the skin. As a rule, radium "puncture" is contraindicated.

Epithelioma. Surgery. Very extensive, deeply infiltrating, squamous-celled epithelioma should usually be excised.

Radium. Most cutaneous epitheliomas, especially those affecting the eyelids, nose, ears and lips, may be treated with radium.

Warts and Keratoses. Warts, especially those around the nails or on the palms and soles, which often resist the ordinary dermatologic measures usually yield to radium.

Senile keratoses, which often degenerate into epithelioma, may be successfully treated with radium.

Angiomas. In angiomas ("birth marks"), radium treatment is the method of choice.

Not all cases are equally amenable to radium, but in properly selected cases it accomplishes more than anything else.

Large angiomatous tumors may disappear and leave hardly a trace behind.

The secret of cosmetic success lies in the avoidance of inflammatory radium reactions.

Keloids. These usually recur after removal by operation. In small keloids, radium is the method of choice. In large keloidal tumors, radium combined with operation is usually successful.

Epithelioma of the Lip. With small lesions, radium is the method of choice, as there is no deformity following treatment.

With larger lesions, much depends on the judgment of the operator as to whether radium or surgery should be used.

If radium is used, we advocate surface irradiations only.

Carcinoma of the Oral and Pharyngeal Cavities. In cancer of structures within the oral and pharyngeal cavities, radium treatment is the method of choice. Surface irradiations are used —directly to the tumor and from the external skin surface.

We advocate the use of large doses for short periods of time.

Carcinoma of the Tongue. Lacassagne, of the Paris Radium Institute, says that in cancer of the anterior two-thirds of the tongue, i.e., up to the lingual V, "it seems well established that the best results are at present obtained by radium puncture."

In cancer of the base of the tongue, i.e., the posterior one-third operation has been practically abandoned by all in favor of radium.

In cancer of the tongue, we combine surface irradiations and "puncture" with lead radon tubules. We have long since given up the use of glass, steel, gold, or platinum needles or "seeds" for purposes of "puncture."

Metastasis to the Lymphnodes of the Neck. When carcinoma has once left its original focus and migrated to the lymph nodes, the prognosis is serious.

Should every case of cancer of the lip, oral and pharyngeal cavities and tongue have block dissection of the neck, even though the lymph nodes are apparently not involved?

Opinions differ. Depending partly on the grade of malignancy, the lymph nodes of the neck are said to be involved in about 10% of the cases.

In the treatment, some advocate a waiting policy on the theory that the probabilities are against the involvement of the lymph nodes.

Others advise block dissection of the neck in the lower grades of malignancy and irradiation of the neck in the higher grades, the degree of malignancy being determined by microscopic examination of the primary lesion.

Much depends on the judgment of the surgeon.

Should every case of cancer of the lip, oral and pharyngeal cavities and tongue with apparent involvement of the lymph nodes have a block dissection of the neck?

Opinions differ. About 25% to 30% of enlarged nodes are said to be carcinomatous—70% to 75% inflammatory.

If only one submaxillary node is apparently involved by carcinoma, the consensus is that it should be excised.

If other nodes are involved surgical excision is seldom successful from the standpoint of a cure but it may give palliation.

Surface irradiation may also give palliation, especially in the higher grades of malignancy.

We are not in favor of radium "puncture" of carcinomatous lymph nodes.

The Respiratory System

Carcinoma of the Larynx. Radium, x-rays or surgery may be adapted to individual cases.

We have devised a new instrument[3] for the intra-laryngeal application of radon in selected cases of cancer of the larynx. If radium is used, only surface applications—intra-laryngeal and

transcutaneous—should be employed. Radium "puncture" is contraindicated.

Gastrointestinal System

In cancer of the esophagus, radium may be used, but the results are disappointing.

In cancer of the stomach, surgery is successful in selected cases. We are opposed to radium "puncture" of esophageal and stomach lesions, a procedure that has been advocated.

In operable cancer of the rectum, surgery is always indicated.

In inoperable cases, radium may be used as a palliative measure.

In using radium for rectal carcinoma, it must be remembered that the rectum is one of the most radio-sensitive of all organs and that rectal carcinoma is radio-resistant.

The Breast

Carcinoma of the Breast. Cancer of the breast is a surgical disease. Operable cases should be operated on.

Many advocate pre- and post-operative irradiation, especially the former.

Burton J. Lee stated that with surgery alone 24% of his cases were alive and well after three years; with surgery and post-operative irradiation; 39.9%; with surgery and pre- and post-operative irradiation, 52%.

Pre- and post-operative irradiation still require a great deal of investigation before it is possible to form a definite opinion as to their value.

In primary or recurrent carcinoma of the breast, radium, if used, is always applied to the surface. Radium "puncture" is contraindicated.

The Urinary System

Carcinoma of Bladder. Surgery is the method of choice.

Radium therapy is disappointing, although Barringer has reported satisfactory results in some cases.

Male Reproductive System

Epithelioma of Penis. Amputation of the penis is the method of choice.

As mutilating operations are often refused, excision of the lesion or surface applications of radium may be used in selected cases. Radium "puncture" is contraindicated.

On account of the frequency of unilateral or bilateral metastasis to adjacent lymph nodes, the prognosis must be guarded.

Carcinoma of Testicle. Pre-operative surface irradiation with surgical removal of the testicle is indicated.

Metastases may be treated surgically or surface irradiations may be used according to the indications.

Carcinoma of Prostate. As a rule, the results of radium treatment have been palliative only. Lack of success has been due largely to the deep situation of the prostate gland, the difficulty in determining the limits of the growth and the frequent presence of metastases when the patient is first seen.

Various radiation methods have been tried. The prostate has been approached through the urethra and through the rectum by means of radium tubes. Success has not generally been achieved, due largely to the radio-resistance of these growths and also because the radium tubes lie too near the growth so that the deeper parts cannot be successfully influenced without causing too much superficial destruction. Perineal implantation of various types of radium needles as well as insertion through a cystotomy wound have met with little success.

Radium and Roentgen treatment applied to the cutaneous surface have been unsatisfactory. Improvements have been seen, but clinical cures are seldom met with.

Female Reproductive System

Carcinoma of the Cervix Uteri. In the treatment of cancer of the cervix, radium has largely taken the place of surgery.

Procedures preliminary to radium treatment, such as douches, curettement, electrocoagulation, cauterization, etc., are contraindicated, as they may lead to metastasis.

Dilating and "plugging" the cervix with a string of radium tubes or implanting radium needles or "seeds" in an infected cervix are also contraindicated as these procedures may cause death from obstruction of drainage and spread of the infection.

The technic of the use of radium in cancer

of the cervix uteri has been described in previous papers.[4]

Carcinoma of the Body of Uterus. In the treatment, hysterectomy is the method of choice.

Some advise the preliminary use of radium in the interior of the uterus.

Fibromyomas of Uterus. Tumors most suitable for radium or x-rays are those not exceeding in size a four months' pregnant uterus which are causing bleeding and in which complications are absent.

Radium treatment may be carried out by intrauterine irradiation with radium or radon tubes, this treatment being often supplemented by the radium bomb applied to the cutaneous surface.

James Ewing once stated that all the bad results he had seen from the radiation treatment of "fibroids" had been in cases in which dilatation and curretage had been immediately followed by the insertion of radium.

We believe it is desirable, therefore, that a week or more should elapse between curettage and the insertion of radium into the uterus.

Myopathic Hemorrhage. In so-called myopathic hemorrhage in which there is persistent uterine hemorrhage at the menopause, without gross demonstrable lesions intrauterine irradiation is efficient.

Ductless Glands

Goiter. We believe the brilliant results of surgery are far superior to those that may be obtained with radium.

In inoperable cases, surface irradiation with radium may be used for palliation.

Thymus Gland. Enlarged thymus gland is very sensitive to surface irridation.

Lymphoid Structures

Hodgkin's Disease. Radium by the surface method may give great symptomatic relief. The final prognosis is grave.

Lymphosarcoma. Surgery is not indicated. Radium by the surface method may be used. Lymphosarcoma is one of the most radio-sensitive of all diseases. Large tumor masses usually melt away under irradiation. Some cases treated early have remained well for long periods. In most cases, the final prognosis is grave.

The Blood

Leukemia. Radium by the surface method is of great value in giving symptomatic relief which may in some cases last for several years. The final prognosis is grave.

The Bones

In certain bone disorders, such as Ewing's endothelial myeloma, surface irradiation with the radium bomb may produce marked amelioration.

We do not favor the insertion of radium needles or tubes into bony structures.

In this hasty sketch of the use of radium in some of the more common disorders we have tried to present the conservative rather than the radical side of radium therapy.

The difficulties in giving a true picture of the use of radium in malignant tumors are very great. The careful follow-up of cases over long periods of times presents almost insuperable obstacles well known to everyone.

Finally we believe one should be unbiased in tumor therapy as to the relative merits of surgery and radium.

Both should be placed at the disposal of patients solely with the idea of obtaining the best and most permanent results.

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A CENTURY OF MEDICAL PROGRESS*

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As 1840 crept across the medical horizon, there were epidemics of smallpox and typhus fever in England and a siege of cerebro-spinal meningitis was spreading throughout Europe from a focus in France. In that year Jacob Heine first described infantile paralysis as a specific condition, which was to concern medicine throughout the century and which is as yet

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unsolved. In that year also Basedow first described exophthalmic goiter. In Baltimore Chapin A. Harris founded the first school of dentistry and the first dental society, and in Illinois the Illinois State Medical Society began its career.

In the decade from 1840 to 1850 among the outstanding investigations which were to affect medical practice profoundly were the first operations done under anesthesia with ether by Crawford Long of Georgia in 1842. Eventually this work was to be repeated and introduced widely by William Thomas Green Morton in 1846 and was to yield one of the greatest blessings ever conferred on men by medical science.

In 1843 Oliver Wendell Holmes pointed out the contagiousness of puerperal fever, but it remained of course for Semmelweiss in 1847 to describe accurately the pathogenesis of puerperal infection.

In the meantime distinguished investigations were added to anatomy, physiology, pathology and chemistry by Liebig, Henle, Rokitansky, Ludwig and Virchow. This was a great period in German medicine, and the end of the century sees German medicine in a state of decline almost impossible to conceive.

Bacteriology had not yet come upon the scene, but in 1845 Langenbeck detected actinomyces, and in 1846 Claude Bernard announced the digestive function associated with the pancreas, Stokes described heart block, and Marion Sims invented the vaginal speculum.

1846—a year which was to have a profound influence on the development of medical science in the United States! For this year saw the organization and the first meeting of the American Medical Association. In the same year Sir James Young Simpson introduced the use of chloroform for anesthesia in obstetrics, and physiology was tremendously advanced by Carl Ludwig's invention of the kymograph. As the years passed, more great discoveries in the field of physiology came from Claude Bernard, Du-Bois-Reymond, Helmholtz and Fehling, who in 1848 introduced his test for sugar in the urine. As this decade ended, Addison described pernicious anemia and suprarenal disease; Claude Bernard produced diabetes by puncture of the fourth ventricle, and Helmholtz measured the velocity of nerve current. In the Mississippi Valley medicine had begun to advance tremendously by the establishment of Rush Medical College, and in 1850 the Chicago Medical Society was organized, and Daniel Drake published a treatise on "Diseases of the Mississippi Valley." In the same year Northwestern University was founded, and in that year also Chatin employed iodine for the prevention of goiter—another discovery which was to be tested and finally established almost 75 years later.

1850-1860: In the period from 1850 to 1860 the outstanding accomplishments were again related to anatomy and physiology, although now mechanical devices began to appear. Nevertheless, the machine age in medicine was not to begin until another 40 years had passed. In 1851 Helmholtz invented the ophthalmoscope, and at the same time Pravaz introduced the hypodermic syringe. Other great discoveries were Bernard's contribution regarding the vasomotor function of the sympathetic nerves, and the work by Ludwig on salivary secretion. A little later Bernard was to show the function of the vasodilator nerves.

In the meantime men had begun to use the microscope to some advantage, and the first signs of the great science of bacteriology began to appear. Rayer and Davaine announced the discovery of the anthrax bacillus, and in 1853 Cohn established the vegetable nature of bacteria. Then in 1854 Ehrenberg published a treatise in which he described a number of organisms to be seen only through the microscope. In 1855 Garcia introduced the laryngoscope, but many of the new devices were not to be fully utilized until Thomas Edison made his contribution which involved lighting by electricity. As this decade ended, one of the most significant steps which was to affect greatly the practice of medicine was the publication of a small book called "Notes on Nursing" by Florence Nightingale.

1860-1870: Outstanding among the announcements for the year 1860 was the demonstration by Pasteur of the presence of bacteria in the air. In the same year Zenker described trichinosis, and in the next year Pasteur discovered anaerobic bacteria. In 1861 also came another discovery which was to have an important effect in creating a new field in medical science, namely the construction of a calorimeter with which to study basal metabolism, this credited to Pettenkofer and Voit. In this decade also

came many important announcements related to the physiology of the brain and the functions of the eye and the ear. Then in 1862 Florence Nightingale established the first training school for nurses at St. Thomas' Hospital. Of interest especially to Illinois was the fact that the old Cook County Hospital in Chicago was established in 1863; Northwestern University Medical School under the name of Chicago Medical College and St. Luke's Hospital were founded in 1864. Truly in Chicago medicine was beginning to find its way. In 1865 the Chicago Hospital for Women was founded, and in 1867 the Chicago Board of Health was organized.

Of greatest importance was the establishment of the Army Medical Library by John Shaw Billings in 1865. Today sees the medical profession and the library authorities of the United States striving to obtain from Congress an appropriation sufficient to house suitably what has become after 75 years probably the greatest medical library in the world.

As this decade ended, the most important of all announcements was made by Brown-Séquard, who now introduced the doctrine of internal secretions. The end of the century sees internal secretions the focus of investigations that almost daily yield new information which means the control of innumerable conditions of disease.

1870-1880: The decade of 1870 to 1880 is probably marked more specifically by the establishment of institutions of education and of medical organizations than by any other single factor. In Chicago 1870 saw the establishment of Mercy Hospital and of the Woman's Medical College. The succeeding years witnessed the beginning of the American Public Health Association and many universities and institutions throughout the world. In 1876 Johns Hopkins University was founded, and in the same year the American Chemical Society. In that year also the new Cook County Hospital was begun and completed. Yet significant contributions were made to medical science, opening up new frontiers by establishing new technics of investigation. In 1874 Paul Ehrlich introduced new technics for staining tissues and blood. Scurvy was described in 1875 by Sir Thomas Barlow. Koch obtained pure cultures of anthrax bacilli on artificial media, and the machines of medical science were improved by the addition of the cystoscope, Esmarch's hemostatic and aseptic bandages. No doubt of even greater significance for the happiness of mankind was the announcement in 1876 of the first portable bathtub from England.

Then in 1878 blood pressure was measured with the sphygmomanometer, and Thomas Edison announced an incandescent electric lamp. As this decade ended, Billings and Fletcher established the Index Medicus and published the first volume of the Index Catalog.

Truly from now on medicine advances more rapidly than ever before in history, simply because of new machines to aid the senses of man and new tools with which medical science might work. In 1880 Pasteur discovered the streptococcus, staphylococcus and the pneumococcus: Eberth isolated the typhoid bacillus; Pasteur and Sternberg demonstrated the carrying of pneumonia bacilli in a healthy mouth, and the great age of bacteriology and immunology began.

1880-1890: Outstanding in this decade are the discoveries related to the germs and the methods of transmission and the technic for aiding man to combat infection. Thus 1881 saw Pasteur produce a vaccine against anthrax, and Koch's introduction of gelatin media for raising germs and steam sterilization for destroying them. In that year also Finlay suggested the likelihood that yellow fever was transmitted by a particular mosquito. In 1882 Koch discovered the tubercle bacillus, and Löffler isolated the bacillus of glanders in pure culture. In 1883 Klebs discovered the diphtheria bacillus, and in 1884 Nicolaier discovered the tetanus bacillus. By this time surgery moved forward, and the technics of new operations were being announced.

Illinois had advanced in medicine meanwhile by the establishment of the College of Physicians and Surgeons in Chicago in 1881 and of Michael Reese Hospital in 1882. Pharmacology advanced with the introduction of antipyrin, ichthyol, lanolin, sulfonal and the use of cocaine. Indeed the announcement of the germ causation of disease seemed to stimulate every aspect of medical science. Golgi stained nerve cells with silver, for which he was later to receive the Nobel Prize. Billroth and Lawson Tait and Senn and Mikulicz and Halsted were great names in surgery. In 1886 Reginald Fitz described the pathology of appendicitis. In that year also von Bergmann

introduced steam sterilization for surgical instruments. As this decade ended bacteriology and immunology continued to dominate medical discovery, and the impetus was so great that new medical organizations and institutions for research were founded almost yearly throughout the world. Conspicuous examples were the Pasteur institutes, the Royal Institute of Public Health in London, and the establishment of public health laboratories in many states in this country.

In 1887 Wagner von Jauregg proposed the concept that for certain infections there were opposing infections—a theory which led eventually to inoculation with malaria as a means of treating dementia paralytica. As this decade closed the Johns Hopkins Hospital was established in Baltimore, von Mering and Minkowski produced experimental pancreatic diabetes, von Behring discovered antitoxins, Einhorn developed a device for seeing the interior of the stomach, Pfeiffer described the influenza bacillus, and Brown-Séquard began to treat human beings with extracts of glands.

In 1890 medicine had begun the first steps toward the tremendous advances of the last fifty years which have exceeded in number and importance of investigations all of the previous centuries of the life of man. In the year 1890 a few investigations were announced which were of vital significance. Thus Koch introduced tuberculin and found that the tuberculous animal could resist reinoculation, and von Behring treated diphtheria with antitoxin. More Pasteur institutes were being opened in various sections of the world, and man's attack against the diseases caused by infection with germs began to take definite form. Within the next few years the Institute for the Study of Infectious Diseases under Koch was opened in Berlin, and the Lister Institute for Preventive Medicine was established in London. Lumbar puncture was introduced by Quincke; Halsted, most famous among American surgeons of the period, introduced the use of rubber gloves in operative surgery, and von Bergmann began the development of an aseptic ritual in surgery which has made possible the vast surgical progress of the present day. In Germany Dettweiler built the first sanatorium for patients with tuberculosis.

The years from 1890 through 1895 might well have been called the period of scientific bacteriology and immunology. Especially significant were the organization of Medical Milk Commissions to examine and certify milk as to its safety, the beginning of medical inspection of schools in New York City, the establishment of fly control for the prevention of diseases transmitted by such insects, and the discovery of the plague bacillus, as well as means by which plague is transmitted from animals to man.

Then in 1895 came a number of discoveries which also might be characterized as establishing an epoch. The first of these was the discovery by Roentgen of the use of the x-ray for determining the presence of dense tissues beneath the surface of the body, the treatment of lupus with ultra-violet light by Finsen, the demonstration of the malarial parasite in the mosquito by Ronald Ross, and the use of serum against snake venoms by Calmette. Truly this was a year of vast importance for the lives of people throughout the world, since the medical discoveries that have been mentioned were merely the first inroads into the unexplored areas of medical science. Each of these investigations was to yield the development of a new specialty in medical science; each of them was to affect profoundly the materials used by the scientific investigator in the further study of disease.

In 1890 the representatives of 55 medical colleges met in Nashville, Tennessee, and agreed that the medical curriculum should consist of a minimum of three years of not less than six months each, with graded courses. The number of medical colleges gradually changed until there were 166 medical colleges in the United States. Then began the work of the Council on Medical Education and Hospitals, and the establishment of an advanced curriculum. Today there are in the United States 77 medical colleges, of which ten give only the first two years and one the last two years. There are 66 medical colleges which require from two to four years of preliminary college education, four years of medical education, and in most instances an internship before the young man can secure a diploma or a license to practice. The extended medical education was of course brought about largely by the vast expansion of medical knowledge and particularly by the development of the armamentarium of

medical practice due to the application in medical science of many discoveries made in the field of mechanics and electricity. For instance, one finds in the reports of 1890 a statement by Dr. George F. Fiske on the use of the phonograph in the testing of hearing. Little did he realize the extent to which the audiometer would be developed by 1940 and the manner in which thousands of persons would be tested by methods which were laughed at in his day.

From 1895 to 1900 investigations continued to be concentrated primarily on immunology and on the bacteria. The filterable viruses were investigated by Löffler; Ramon y Cajal published his monumental thesis on the texture of the nervous system; direct bronchoscopy was introduced by Killian, and Ehrlich demonstrated the side chain theory of immunity.

Americans need not be reminded that in 1899 Reed, Carroll, Lazear and Agramonte demonstrated the transmission of yellow fever by the mosquito, which was to make possible the elimination of yellow fever from the civilized world. Such discoveries gave impetus to the founding of schools of tropical medicine and investigative institutes throughout the world.

With the turn of the century medicine moved on into a new stage. The hospital came to be more and more the center of medical care. Nurses' training schools were established. Technicians began to aid the work of the laboratory investigator. The x-ray was applied to the treatment of cancer, and new methods of investigation revealed new disease syndromes formerly not susceptible of diagnosis. In 1901 Bordet and Gengou demonstrated complement fixation, which was soon to yield the Wassermann test. Landsteiner described the phenomenon of iso-agglutination which made possible blood transfusions. Takamine isolated the active principle of the adrenal glands, and endocrinology began to be a science.

Institutes for the study of infectious diseases began to spring up throughout the world. The Rockefeller Institute for Medical Research was founded in New York, and the Instituto Oswaldo Cruz opened in Rio de Janeiro. In Copenhagen a State Serum Institute was established. Then came the announcement of the discovery of the quartz mercury vapor lamp by P. C. Hewitt, which in later years was to prove to be a means of controlling rickets. Attention began to be given to the question of pain in childbirth, and Steinbuchel introduced morphine-scopolamine anesthesia for that purpose. In 1903 came the demonstration of local anaphylaxis, and the identification of serum sickness with that condition. Robert Koch stressed the danger of the healthy carrier of typhoid as an agent of infection. The string galvanometer was invented by Einthoven, and thus came the first impetus toward the development of electrocardiography. Indeed the stimulus given to the advancement of medical science by the discoveries of the period from 1890 to 1900 was so great that in every year thereafter the discoveries of each year were so numerous and so significant as to challenge even a listing.

Thus 1905 alone saw the discovery of the parasite of syphilis by Schaudinn and that of whooping cough by Bordet and Gengou. In that year came the discovery of procaine, the use of parathyroid extract for tetany, information regarding the transmission of sleeping sickness, new staining methods of nervous tissue and for the spirochetes, and the first successful flight in an airplane by the Wright Brothers.

Most significant among the discoveries of the next five-year period, namely that up to 1910, was the establishment of the doctrine of allergy by von Pirquet, as well as the introduction of the Wassermann test; Barany's theory of nystagmus; the concept of accessory food factors, first seriously considered by Gowland Hopkins; the use of pituitrin in obstetrics by Blair Bell; the introduction of the cutaneous test for tuberculosis; the demonstration of tick-transmission of Rocky Mountain fever; Buerger's description of thrombo-angiitis obliterans; the introduction of vaccines against typhoid fever; the experimental production of poliomyelitis by Flexner, and the great culmination in 1910 with the introduction of arsphenamine by Paul Ehrlich.

Now this period might truly be called the adaptation of the machine age in medical science. Up to this time diagnosis had depended largely on the use of the unaided five senses of man, with perhaps such simple devices as the stethoscope and the thermometer. Now came the period when electricity began to be employed for the lighting of the interior cavities of the body, and the x-ray began to be widely used for the demonstration of changes beneath the surface. New

apparatus appared in the laboratory, and chemistry began to be widely employed for determining the extent to which the physiology of the body was changed. Medical attention began to concentrate upon the blood as the tissue of the greatest significance in the maintenance of life.

Especially significant in the period from 1910 to 1920 was the description of bacterial endocarditis by Libman. Carrel's work in tissue culture and transplantation, Cushing's studies of the pituitary gland, and the optical researches of Gullstrand were important. Then came the naming of the vitamins by Casimir Funk, Pavlov's establishment of conditional reflexes, and immunization against diphtheria by the use of toxin-antitoxin. The van Slyke technic for estimating nitrogen, the Folin technic for estimating amino-acids, and Cannon's studies of the relationship between the emotions and the functions of the body were outstanding. The x-ray was improved by the use of pneumoperitoneum as introduced by Weber, the Coolidge tube and the Potter-Bucky diaphragm.

This too was the period of the World War, with new technics for the treatment of war wounds, the introduction of poison gases, methods for averting their evil effects, new studies of gas gangrene and the establishment of trench fever and trench mouth as widespread diseases.

Attention began to be given now, with the coming of the industrial age, to occupational diseases, and the industrial physician became a new type of specialist.

In the latter half of this period came the description of encephalitis lethargica as a widespread condition, more recently related to the polioencephalitis of horses. In this period also was established by Alice Evans the relationship between Malta fever and the contagious abortion of cattle. Wagner von Jauregg treated paresis or dementia paralytica by the inoculation of the patient with malaria—a significant step which was to lead eventually to the introduction of fever treatment for a wide variety of conditions and indeed the establishment of fever treatment as a new specialty. The use of roentgenography was still further improved by the application of the x-ray with injection of air into the spinal cord and brain as a means of determining the presence of tumors—a procedure accredited to Dr. Walter Dandy.

In this period also the surgery of the brain began to become a common procedure with the leadership of Dr. Harvey Cushing. In this connection Weed and McKibben showed that intravenous injections of hypertonic solutions would lower the pressure within the skull.

Medicine turned its attention now toward the application of some of the new knowledge of the vitamins for the prevention and treatment of disease. Cod liver oil, which had been discarded because it yielded little more in the way of calories than did butter, was found to be the richest known source in nature of vitamin D. Rickets, once a widespread disease, began to yield to the application of this knowledge. Huldschinsky proved that ultra-violet rays from the mercury vapor quartz lamp could control rickets. Mellanby produced rickets experimentally and treated the experimental condition successfully with cod liver oil.

1920-1930: The curve of medical discovery continued to rise rapidly. New pathways of medical discovery were opened, each of which yielded an increasing ratio of magnificent observations. In 1920 Noguchi discovered the organism responsible for spirochetal jaundice. Rubin in New York developed a test for sterility which involved the use of the x-ray following the injection of air into the fallopian tubes. Previously spinal puncture had been employed for study of the spinal fluid, and now direct puncture of the ventricles was introduced. The Wassermann test began to be improved upon and modified by a variety of procedures.

The year was one which saw the founding of innumerable institutions for the study of immunity and for the advancement of medical science. Moreover, in the score of years from 1900 to 1920 there had begun to develop the profession of social service. Great societies were formed for the investigation and for the promulgation of knowledge concerning individual diseases. Special groups were formed for the care of mothers, for the care of children, for occupational diseases, for mental conditions and for the promotion of hygiene in general.

Then in 1921 came the conclusion of an investigation which was again to establish the mastery of scientific medicine over what had been previously a well nigh uncontrollable disease. This was the year in which Banting and Best and

Collip and Macleod announced the isolation of insulin as the active principle of the pancreas concerned with the metabolism of sugar. Their discovery was a culmination of a series of observations which had begun wth Aretaeus thousands of years before. Up to this time juvenile diabetes had been an invariably fatal disease. Now children properly treated could be provided with a prognosis of almost a normal life expectancy. Out of this discovery came a tremendous stimulation for the study of all of the glands of internal secretion in the human body. Indeed so tremendous was the stimulus in this period to the sciences concerned wth nutrition and with the glands that the period from 1920 to 1940 might well be called the epoch of the vitamins and the endocrines, exactly as the previous thirty years might well be called the epoch of bacteriology and immunology. While attention was given primarily at this time to the glands and to the vitamins, every other phase of medicine likewise made progress. Kahn introduced his new precipitation test for syphilis; surgery of the chest became a well established procedure; George and Gladys Dick discovered the hemolytic streptococcus specific for scarlet fever and devised tests for determining susceptibility, methods of prevention and methods of treatment.

Applying to the x-ray still another technic, Graham and Cole introduced examination of the gallbladder by x-rays following the injection of specific substances which localized in the gallbladder. Especially important in this period also were the advancements related to anesthesia. The fundamental discoveries of Long, Morton and Horace Wells concerning the use of ether and nitrous oxide began to be supplemented by a wide variety of anesthetic substances. Luckhardt studied acetylene and established the use of ethylene. These discoveries were to be followed later by the use of such substances as vinethene and cyclopropane. Moreover, local anesthesia, spinal anesthesia, block anesthesia and similar procedures made of anesthesia a specialty in medicine as important as any of the other thirty different categories into which the actual practice of medicine may now be divided.

During the early part of this decade Whipple in Rochester, New York, and Minot and Murphy in Boston had been giving special attention to the incurable disease which afflicted mankind—pernicious anemia. Now their discoveries culminated with the introduction of a diet of raw liver for this disease, which eventuated in the development of preparations which will overcome pernicious anemia and which have turned a once invariably fatal condition into one regularly controlled by medical science.

1930-1935: As 1929 ended, extracts of liver were definitely established in the treatment of pernicious anemia, and the Nobel Prize in medicine for 1934 was awarded to Doctors Whipple, Minot and Murphy for their research. Today we know that the liver is a vast storehouse of chemical substances associated with protection of the body against many diseases and deficiencies.

Among the hazards of industry, attention began to center particularly on toxic gases, such as carbon monoxide, and on such poisonous substances as lead, arsenic and various aniline derivatives used in paints, dyes and varnishes. Now it was found that the taking into the body of drugs such as amidopyrine, dinitrophenol and benzene derivatives would cause a sudden precipitate drop in the white blood cells in many people. This condition became established as granulocytopenia or malignant neutropenia.

Industrial diseases came definitely to be recognized as one of the most vital branches of medical practice.

This period saw also the introduction of a special alum precipitated toxoid which seemed to be well nigh the ultimate development in protection against diphtheria. In 1933 an epidemic of what was called "American sleeping sickness" appeared, later to be called encephalo-poliomyelitis, and ultimately to be traced to animal carriers and to the equine encephalitis which had been widespread in the world among horses. horses.

Now too attention centered further on the glands so that new extracts were prepared of the pineal gland, capable of producing normal size in dwarfed rats, and of the cortex of the adrenal, important in the attack on Addison's disease and other deficiencies. Surgery began to reach a peak with the development of new technics, new anesthetics and surgical teams. In this period a lung was removed completely from the human body because of the presence of cancer. Five years later the patient from whom the lung was removed was able to run up a flight of steps

as proof of his complete recovery. Large portions of the pancreas were removed successfully. Portions of the parathyroid gland were removed in surgical investigations, and interesting results were developed by cutting portions of the sympathetic nervous system. Such an operation was applied also for the prevention of pain in the presence of incurable carcinoma. Now also a new type of physiologic surgery appeared involving operations on the nervous system to control hypertension. Another extraordinary development was the artificial respirator, which was to be known throughout the world as the iron lung, and proved to be of great significance in keeping alive persons paralyzed by infantile paralysis or by other conditions affecting the nervous system.

Many years had passed without any significant development for the control of osteomyelitis. Now a new biologic principle was introduced with the development of the so-called maggot treatment. This, nevertheless, did not seem to be the ultimate, and the end of the decade was to see the development of a new derivative of sulfanilamide with special virtues against the staphylococcus.

The significant results achieved in the control of deficiency diseases led to investigations for special substances which might be of aid in various diseases in which the primary difficulty was weakness of the musculature. Feedings were attempted with glycine and its derivatives, and the next ten years were to see gelatin vaunted also for this purpose. Yet neither of these methods achieved sufficient repute to indicate permanent value. Among the curiosities in medicine which developed during this decade was the successful birth and rearing of quintuplets in Canada.

Culminating also in this period were investigations of social-medical character conducted by various groups who were planning a wider distribution of medical service. Thus 1932 saw the report of the Committee on the Costs of Medical Care and of the Commission on Medical Education. Subsequently came the report of the American Foundation Studies in Government, the National Health Survey and the so-called National Health Program. Associated with these reports a vast propaganda swept the United States in an endeavor to bring about a revolution in the system of medical service leading toward the adoption of a nation-wide plan for compulsory sickness insurance, if not, indeed, a complete state medical service. Activities of the medical profession resulted eventually in recognition of the necessity for medical leadership in gaining wider distribution of medical service while sustaining its principles which have given American medicine its prominent position. Eventually these principles were concentrated by the American Medical Association into a simple platform:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. Th extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

1935-1940: Outstanding among the developments in medicine for the last five-year period were the development of protamine insulinate and crystalline zinc insulin in the treatment of diabetes, the use of mandelic acid in infections of the urinary tract, the development of sulfanilamide, sulfapyridine and sulfathiazol for streptococcus, staphylococcus and other infections. Benzedrine was adapted to a variety of conditions. Frozen serums were introduced as a method of preserving the qualities of the blood for therapeutic purposes, and blood banks began to be established for the preservation of human blood, plasma and serum to be used in transfusions.

New methods of treating dementia praecox with insulin and metrazol shock attracted world-wide attention. Several vitamins were isolated in pure form, and new specific serums

were developed for some of the unusual types of infections with pneumonia. New electrical devices were originated to indicate the extent of activities within the brain. It was shown, moreover, that the virus of infantile paralysis enters the body in most instances by way of the nose or gastrointestinal tract and may pass from the body in various ways. Nicotinic acid, derivative of vitamin B, was found to be specific in the control of pellagra in human beings and in black tongue in dogs. Vitamin B_1 was isolated in crystalline form as thiamin chloride, and it was discovered that there are actually widespread deficiencies of this vitamin in the American diet. A new vitamin called K, derived from alfalfa, soy bean oil and other vegetable oils, was found to be useful in jaundice when surgery is contemplated and in other conditions in which the prothrombin in the blood is inadequate to permit coagulation. Heparin was derived from liver, muscle, blood and other tissues and was found to be important in preventing clotting of the blood. It is used to prevent post-operative thrombosis and also in the treatment of embolism. New hormones were isolated from the glands concerned with sex. The seat of human emotions was determined to be the hypothalamus in the brain.

It was proved to be possible to transplant the cornea of the eye, and studies began to be made with an apparatus called the cyclotron, an atom-smashing machine which it was believed would be of virture in the treatment of cancer. Another derivative of vitamin B, called vitamin B_6, was then found to be associated with various disturbances of the skin, and a new surgical operation was developed to aid persons with otosclerosis. Another operative procedure was found for overcoming paralysis of the vocal cords which sometimes follows operation on the thyroid gland in which there is cutting or damage to the nerves of the vocal cords. Extended studies were made on the physiology of the human being in high altitudes—of the utmost importance in association with the advancement of aviation.

Then, as the decade passed, medicine mourned the deaths of many great physicians whose careers had marked a period significant beyond any similar period in the history of man. The names of Frank Billings, John B. Murphy and L. L. McArthur were outstanding among leaders in the state of Illinois. The names of Harvey Cushing, William and Charles Mayo, Alexander Lambert, George H. Simmons, Hideyo Noguchi and many others might be cited among those who had contributed vastly to new types of organization, investigation and leadership, which had given the United States a position of preeminence in medical practice.

EPITOMIZED RECORD OF PROGRESS OF MEDICINE DURING THE LAST HUNDRED YEARS*

1840—1940

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Detailed record of the Progress of Medicine During the Last Hundred Years is here epitomized. Members are asked to read it carefully. In this epitome reference is made to a number of items of more than passing interest to Illinoisians.

1840—Jacob Heine describes infantile poliomeylitis.
Basedow describes exophthalmic goiter.
Henle publishes statement of germ theory of communicable diseases.
Clarke describes sleeping sickness in Sierra Leone.
Medical Department of Kemper College (St. Louis) first medical school west of the Mississippi.
Brompton Hospital for Consumption and Diseases of the Chest (London).
Free Vaccination Act (3-4 Victoria, cap 39) England.
École préparatoire de médecine at Tours.
G. J. Mulder founds chemistry of proteins
Chapin A. Harris founds first dental school and society (Baltimore).
Illinois State Medical Society organized
1840-49—Pandemic cholera.
1841—Henle's Allgemaine Anatomie published.
Medico-Psychological Association (London) founded.
Académie royale de médecine (Belgium) founded.
Dieffenbach treats stammering by section of the lingual muscles.
Kölliker describes development of spermatazoa.
Longet describes innervation of the larynx.
Longet allocates voluntary movements and sensation to the anterior and posterior column of the cord.
1842—J. R. Mayer states law of Conservation of Energy.
Rokitansky publishes treatise on pathology.
Long operates with ether anesthesia.
Wöhler effects synthesis of hippuric acid from benzoic acid.
Wöhler effects proteolysis.
Berard differentiates between septicemia and pyemia.
Liebig publishes treatise on organic chemistry.
Diffenbach publishes treatise on strabismus.
Bartolomeo Signorini excises lower jaw (September 27).
Anatomical Institute and New Canton Hospital (Zürich) opened.
Joussens (Brussels) introduces spot (colored pin) maps for localizing infectious diseases.
School of Pharmacy (Pharmaceutical Society of Great Britain) in London.
Henle and Pfeufer found Zeitschrift für rationelle Medecin (Zürich).
Wunderlich founds Archiv für physiologische Heilkunde (Stuttgart).
1842-4—Relapsing fever epidemic in Scotland.

Supplement to "LOOKING BACKWARD FROM OUR HUNDREDTH BIRTHDAY." CENTENNIAL NUMBER, May, 1940.

1842-50—Cerebrospinal meningitis in United States.
1843—O. W. Holmes points out contagiousness of puerperal fever.
Dubini discovers ankylostoma duodenale.
Carl Ludwig investigates mechanism of urinary secretion.
Klencke inoculates rabbits with tuberculosis.
Charles Gerhardt obtains acetanilide.
Charles Robin discovers OIdium albicans.
Kychler introduces test types.
Wheatstone bridge invented.
Simpson, Huguier and Liwisch introduce uterine sound.
Farr publishes life-table.
Sydenham Society founded (London).
École préparatoire de médecine at Dijon.
Société de chirurgie (Paris) founded.
1843-55—Chadwick reports on intramural burial in English towns.
1844—Rokitansky demonstrates tubercular nature of Pott's disease.
A. J. Balard discovers amyl nitrate.
Grüby discovers Trichophytin tonsurans as cause of herpes tonsurans.
Metropolitan Health of Towns Association (London) founded.
Society for Improvement of the Condition of the Laboring Classes (London) founded.
New York Pathological Society founded (Incorporated 1886).
Société centrale de médecine vétérinaire (Paris) founded.
Royal College of Veterinary Surgeons (London) founded.
Association of Obstetricians and Gynecologists (Berlin) founded.
Negri first obtains smallpox vaccine by inoculation from cow to cow.
Dr. Horace Wells discovers anesthesia.
Robert Remak discovers the cardiac ganglia, which are regarded as the generators of cardiac muscle activity.
1845—Queen's College (Belfast) founded.
Virchow elucidates embolism as the cause of pyemia.
Virchow and Hughes Bennett describe leukemia.
Andrew Buchanan investigates coagulation of the blood.
Langenbeck detects actinomyces.
University of Honduras (Tegacigalpa) founded (opened 1847).
Academia médico-quirurgica española (Madrid) founded.
Veterinary Society in Berlin.
1845-61—Rynd (Dublin) employs hypodermic injections.
1846—Weber brothers discover inhibitory effect of vagus nerve.
Morton introduces ether anesthesia.
Marion Sims invents vaginal speculum.
Claude Bernard discovers digestive function of pancreas.
Stokes describes heart-block.
Leibig discovers tyrosin.
Elias Howe patents sewing machine.
Royal Saxon Academy of Sciences (Leipzig) founded.
Smithsonian Institution of Washington founded.
American Medical Association organized (first meeting, Philadelphia, 1847).
Pathological Society (London) founded.
1846-8—Dysentery and typhus in Europe.
Kölliker describes smooth muscle.
1846-9—Great famine and fever period in Ireland.
1846-51—Epidemic cerebrospinal meningitis in Sweden.
1847—The American Medical Association organized.
Helmholtz publishes treatise on Conservation of Energy.
Virchow founds Archiv für pathologische Anatomie (Berlin).
Joule determines mechanical equivalent of heat.
Sir J. Y. Simpson introduces anesthesia in obstetrics.
Semmelweis discovers pathogenesis of puerperal fever.
Donders elucidates movements of the eyes.
Carl Ludwig invents Kymograph.
Gerlach injects capillarics with carmine stain.
K. B. Reichert obtains oxyhaemoglobin.
James Young distils petroleum.
Royal Academy of Sciences founded at Vienna.
New York Academy of Medecine founded (Incorporated 1851).
Warren Anatomical Museum (Havard University).
O. W. Holmes appointed Parkman professor of anatomy at Harvard.
1847-9—Dysentery pandemic in United States.
University of Messina closed.
1847—Charles Babbage invents the ophthalmoscope.
1848—Helmholtz locates source of animal heat in the muscles.
Claude Bernard discovers glycogenic function of the liver.
Du Bois-Reymond publishes treatise on animal electricity.
Fehling introduces test for sugar in urine.
Société de biologie founded (Paris).
University of Wisconsin (Madison) founded.
American Association for Advancement of Science founded.
School of Veterinary Medicine at Cordova (Spain).
English Public Health Act creating general and local boards of health passed.
Elizabeth Blackwell, the first woman to receive M.D. degree.
1848-9—Cholera reaches England and Scotland.
1848-51—University of Pavia closed.
1848-52—Second French Republic.
1848-53—Indian Government constructs Ganges Canal and restores Delhi Canal.
1848-58—General Board of Health (England).
1849—Addison describes pernicious anemia and suprarenal disease.
Claude Bernard produces diabetes by puncture of the fourth ventricle.
Marion Sims operates for vesico-vaginal fistula.
Virchow professor of pathology at Würzburg.
J. M. Mitchell publishes treatise on cryptogamous origin of malarial fever.
Sédillot performs gastrostomy.
Millon introduces reagent for proteins.
John Snow publishes views on water-borne cholera.
James Thomson establishes absolute scale of temperature (Thermometry).
Hutchinson invents spirometer.
Physico-Medical Society at Würzburg.
Central Board of Health (Canada) organized.
Royal Canadian Institute (Toronto) founded.
1850—University of Pisa reopened.
Helmholtz measures the velocity of nerve current.
Clausius demonstrates and establishes second law of thermodynamics (Carnot, 1824).
Waller states law of degeneration of spinal nerves.
Rayer and Davaine discover anthrax bacillus (Polender, 1849).
Thomas Way demonstrates purification of sewage by fertilization of soil.
Vierordt introduces sphygmograph
Daniel Drake publishes treatise on Diseases of the Mississippi valley.
William Detmold (New York) opens abscess of the brain.
Northwestern University (Chicago) founded.
Report on sanitary condition of Massachusetts (Lemuel Shattuck).
Steady decline of population in Ireland (end of famine and fever).
Royal Scientific Society of Dutch East Indies (Weltvreden) founded.
Chicago Medical Society organized (April 19).
Metropolitan Interments Act (England).
Women's Medical College of Pennsylvania (Philadelphia) founded.
Epidemiological Society (London) founded.
1850-52—Chatin employs iodine for prophylaxis, of goitre.
1851—University of Minnesota (Minneapolis) founded.
Helmholtz invents ophthalmoscope.
Claude Bernard explains vasomotor function of sympathetic nerves.
Ludwig and Rahn investigate nerves of salivary secretion.
Michaelis publishes Das Enge Becken.
Funke Discovers hemoglobin.
Fairet describes circular insanity.
Nélaton describes pelvic hematocele.
University of Pavia reopened (November 5).
Medical Faculty of Georgetown University (D. C.) founded.
Wiener medicinische Wochenscrift founded.
1851-3—Pravaz introduces hypodermic syringe.
1852—Kolliker's treatise on histology published.
Pirogoff employs frozen sections in his Anatome topographica
International Congress of Hygiene at Brussels.
Obstetrical Society (London) founded.

Farr reports on cholera epidemic of 1848-9.
Griesinger shows ankylostoma to he the cause of Egyptian chlorosis.
Babo demonstrates the rapid separation of blood-corpuscles from the serum by centrifugation.
Horace Green excises growths from larynx per os.
Magnus Huss defines alcoholism.
Langenheck introduces subcutaneous osteotomy.
Remak shows that growth of tissues is due to cell-division.
Société médico-psychologique (Paris) founded.
Hospital for Sick Children at Great Ormond Street, London.
School of Military Medicine at Val-de-Grâce (Paris).
School for Javanese physicians at Weltvreden.
Mercy Hospital (Chicago) chartered (June 21).
Tufts College (Medford, Massachusetts) founded (Medical School, 1893).
St. Mary's Hospital (London) founded.
Veterinary School at Léon (Spain).
1852-3—B. A. Morel describes démence précoce.
1852-70—Second Empire in France.
1853—University of Melbourne founded.
Washington University (St. Louis) founded.
Marion Sims publishes treatise on vesico-vaginal fistula.
Stanislao Cannizarro obtains alcohols from aldehydes.
Budge establishes functional independence of spinal cord (localization of centers).
Farr publishes second English life-table.
Cohn establishes vegetable nature of bacteria.
Virchow discovers neuroglia.
Gilman Kimball excises uterus for fibromyoma.
1853-56—Crimean War: Florence Nightingale.
1854—Hittorf investigates electrolysis (ions).
Sir. W. R. Hamilton introduces quaternions.
California Academy of Sciences (San Francisco) founded.
Dysentery pandemic in Europe.
Graefe elucidates glaucoma and its treatment by iridectomy.
University of Marseilles, Clermont-Ferrand and Nancy founded.
Ehrenberg publishes treatise on micro-organisms.
Boston Medical Library founded.
Claude Bernard discovers function of vasodilator nerves.
Graham investigates osmosis.
Crédé introduces method of removing placenta by external manipulation.
Middeldorpf introduces galvanocautery in major surgery.
Chlorine treatment of London sewage authorized (English Royal Commission).
Beauperthuy states theory of mosquito transmission of yellow fever.
Spanish law regulating public health.
Aerztliches Intelligenz-Blatt (Münchner medicinische Wochenschrift, 1886) founded.
Graefe founds Archiv für Opthalmologie (Berlin).
Dr. N. S. Davis began regular publication of reports on health of Chicago.
Dr. Daniel Brainard advocates infiltration of iodine solution in treatment of poisoned wounds.
Robert Arthur, D.D.S., demonstrated adhesive properties of gold for dental fillings.
1854-6—Belgrand constructs sewers of Paris.
1854-60—Cerebrospinal meningitis epidemic in Sweden and Germany.
1855—Manuel Garcia introduces laryngoscope.
Addison publishes memoir on diseases of the suprarenal capsules.
Farr publishes classification of diseases.
Burmeister classifies insects.
Remak employs galvanic current in diagnosis and therapy.
Marion Sims founds Hospital for Women's Diseases (New York City).
Royal Academy of Sciences (Amsterdam) founded.
Water filtration compulsory in London.
Bessemer steel process and Bunsen burner invented.
Paris Exposition.
Discovery of Trichinae.
First use of quarantine placards in Chicago.
A. S. Cheesbrough, engineer, advised flushing Chicago river with water from Lake Michigan.
1855-61—Sidney Herbert's reforms in military sanitation.
1855-76—John Simon serves as Central Medical Officer (London).
1856—Sir W. H. Perkin (1838-1907) obtains aniline dyes (coal-tar products).
Panum investigates chemical products of putrefaction.
Brücke investigates speech (phonetics).
Caspar's treatise on medical jurisprudence published.
1856-7—Berlin water supply filtered.
1856-9—Pandemic diphtheria.
1856-60—General spread of diphtheria in Europe and America.
Virchow becomes professor of pathology in Berlin.
Jobst and Hesse discover physostigmin.
1857—Graefe introduces operation for strabismus.
E. B. Elliot prepares first Massachusetts Life-table.
Typhoid fever traced to milk (Penryth, England).
Petters discovers acetone in urine and expiration of diabetics.
Bouchut performs intubation of the larynx.
Universities of Chicago, Calcutta and Madras founded.
Lucien Corvisart shows that pancreatic juice can digest proteins.
Pathological Society of Philadelphia founded.
National Sanitary Convention in Philadelphia.
1858—Virchow's Cellularpathologie published.
Claude Bernard discovers vaso-constrictor and vaso-dilator nerves.
Marcet discovers lipolytic power of gastric juice.
Niemann isolates cocaine in Wöhler's laboratory.
Pettenkofer proves that solid walls are permeable to air.
Kekulé shows quadrivalence of carbon atom.
English Public Health and Local Government Acts (transfer of functions of General Board of Health to Privy Council and Home Secretary).
Medical Act (England) ascertaining status of qualified and registered practitioners.
Veterinary High-School at Copenhagen.
National Sanitary Conference at Baltimore (Maryland).
Royal Dental Hospital (London).
Czermak invented the Laryngoscope.
1858-67—Pullman cars introduced.
1859—Darwin's Origin of Species published.
Wagner completes score of Tristan (produced 1860).
Kirchoff and Bunsen discover spectrum analysis.
Graefe describes retinal embolism.
Landry describes acute ascending paralysis.
Pfüger publishes memoir on electrotonus.
Petroleum used in oil-lamps (Pennsylvania).
Florence Nightingale publishes Notes on Nursing.
Farr publishes Healthy District Life Table.
Sir J. Bazalgette plans canalization (sewage disposal) of London (executed 1859-75).
Hermann Brehmer opens hospital for phthisis at Görbersdorf.
Kolbe synthetizes salicylic acid.
Botanic Gardens at Singapore.
National Sanitary Convention at New York (City).
Laboratory of Marine Zoölogy and Physiology at Concarneau (Finistère).
Dr. James McF. Gaston successfully performs intestinal anastomosis by united portions of a severed gut protruding through a wound in the abdominal wall.
Chicago Medical College started—the first medical school in America requiring graded course of instruction.
1860—Pasteur demonstrates presence of bacteria in air.
Lemaire points out antiseptic properties of carbolic acid.
Czermak introduces rhinoscopy.
Donders introduces cylindrical and prismatic spectacles for astigmatism.
Zenker describes trichinosis.
Couchut publishes Du nervosisme.
G. J. Symonds publishes British Rainfall (Vol. I).
Berliner medicinische Gesellschaft founder.
Institute of Veterinary Medicine at Turin.
Adulteration of Food Act (England).
England and Massachusetts enact first laws against adulteration of milk.
Parkes becomes professor of military hygiene at Army Medical School (Chatham).
National Sanitary Convention at Baltimore.

Duchenne describes bulbar paralysis.
Schultze introduces method of resuscitating asphyxiated infants.
University of California founded.
Sir William Thompson discovers the electrometer.
1860-92—Canalization of Munich for sewage disposal (Pettenkofer).
1861—Ernest Brand introduces hydrotherapy in typhoid fever.
Pasteur discovers anaerobic bacteria.
Pettenkofer and Voit construct calorimeter (basal metabolism).
E. B. Wollcott (Milwaukee) first excisesrenal tumor.
Thure Brandt introduces massage in gynecology.
Ménière describes labyrinthine vertigo.
Max Schultze defines protoplasm and cell.
Broca discovers speech center in the brain.
Buckminster Brown establishes Samaritan Hospital (New York).
Massachusetts Institute of Technology (Boston) founded.
Society of Psychiatrists (St. Petersburg) organized.
Semmelweiss (Vienna) shows cleanliness as preventive of puerperal fever.
1861-65—Civil War in the United States.
National Sanitary Commission (United States).
1862—University of Urbino opened (1671).
Raynaid describes symmetrical gangrene.
Phoebus summarized knowledge of "early summer catarrh" (hay fever).
Donders publishes studies on astigmatism and presbiopia.
Spencer Wells operates for tubercular peritonitis.
Krassovsky performs first ovariotomy in Russia.
Victor von Bruns performs first laryngeal operation with laryngoscope.
Florence Nightingale establishes training school for nurses at St. Thomas' Hospital.
Winternitz and Oppolzer found first hydropathic establishment at Vienna.
University of Warsaw reopened as a High School (closed 1869).
Entomological Society (Iris) at Dresden.
1863—Helmholtz's Tonempfindungen published.
Deiters discovers glia cells (astrocytes).
Virchow investigates tumors.
Davaine produces anthrax experimentally.
William Banting publishes Letter on Corpulence.
Kahlbaum classified insanity and defines paraphrenia as age-linked insanity (neophrenia, hebephrenia, presbyophrenia).
Setchenoff's work on cerebral reflexes published.
Pasteur investigates silkworm disease.
Army Medical School (England) transferred to Royal Victoria Hospital (Netley).
Old Cook County Hospital (Chicago) started.
American Veterinary Medical Association (Detroit) founded.
Biological station at Areachon (Gironde).
National Academy of Sciences (Washington) founded.
University of Belgrade (Jugoslavia) founded.
Systematic nursing first established (in the United States).
1863-5—Pandemic cholera.
1863-82—Ismail Pasha (first Khedive of Egypt).
1864—Donders publishes treatise on anomalies of accommodation and refraction.
Traube investigates pathology of fever.
Hlasiwetz and Barth obtain resorcin.
Conheim elucidates mechanism of inflammation (diapedesis of eleucocytes).
Parkes' Manual of Practical Hygiene published.
Geneva Convention.
LeVerrier founds Association française pour l'avancement des sciences.
Weit describes causalgia.
Gray Herbarium (Harvard University) founded (Cambridge, Massachusetts).
German Psychiatric Society (Berlin).
Chicago Medical College incorporated.
St. Louis College of Pharmacy founded.
University of Bucharest (Roumania) founded.
Berliner klinische Wochenschrift founded.
Max Schultze founds Archiv für mikroskopische Anatomie (Bonn).
Use of milk from diseased cows prohibited in Boston.
St. Luke's Hospital (Chicago) opened.
Council of Hygiene (New York City).
K. F. W. Ludwig and L. Thiry discover the important vasomotor center which regulates the circulatory system.
1865—Gregor Mendel publishes memoir on plant hybridity.
Zander introduces mechanotherapy.
University of Odessa founded.
Cornell University founded at Ithaca.
St. Louis Public Library founded.
Yellow fever and Russian cattle-plague in England.
Report of Citizen's Association on sanitary conditions of New York City.
Billings founds American Medical Library (Surgeon General's Office, Washington).
First Roumanian Medical Society at Galatz.
Rivers Pollution Commission (Great Britain).
Chicago Hospital for Women founded.
Herman Sprengel devises the mercury air pump.
1865-6—Asiatic cholera in Europe.
Villemin demonstrates transmissibility of tuberculoses by inoculation (Klencke, 1843).
1866—Seven Weeks' (Austro-Prussian) War.
Voit establishes first hygienic laboratory in Munich.
Ludwig and Cyon investigate the vasomotor nerve.
Marion Sims publishes Clinical Notes on Uterine Surgery.
Graefe describes sympathetic ophthalmia.
Liébault publishes treatise on hypnotism.
A. J. Angström introduces Angström units.
P. H. Watson (Edinburg) performs first excision of larynx.
Academy of National Sciences at Agram.
Society of Physicians at Cracow.
Pukinje founds Society of Czech Physicians at Prague.
Metropolitan Health Board (New York City) established (April 21).
Local anesthesia by means of ether spray.
Alexian Brothers Hospital (Chicago) established.
1867—Lister introduces antiseptic surgery.
Helmholtz publishes treatise on physiological optics.
Kussmaul introduces intubation of the stomach.
Moritz Traube devises semi-permeable membranes.
English Sanitary Act.
Charles Liernur introduces pneumatic system of disposal of sewage.
Bobbs performs cholecystotomy.
Percy Frankland introduces combustion process for measuring organic matter in water.
A. W. von Hoffman discovers formeldehyde.
First International Medical Congress at Paris.
Siemens brothers introduce dynamo.
Dominion of Canada established (July 1).
Opening of Suez Canal and of Pacific Railway.
First tunnels for Chicago water-supply completed.
Clinical Society (London) founded.
Canadian Medical Association organized.
W. H. Draper lectures on dermatology (College of Physicians, New York).
Metropolitan Poor Law Act (England).
Chicago Board of Health organized.
Tenement House Law (New York City).
K. F. W. Ludwig and Albert von Bezold discover the accelatory nerves of the heart.
Dr. R. A. Kinloch performs first laparotomy for resecting the intestine and restoring its continuity.
1868—University of Tokyo (Tokyo Teikoku Daigaku) founded (Library, 1872).
Haeckel's Naturliche Shopfungsgeschichte published.
Darwin publishes treatise on Variation in Animals and Plants.
Heidenhain investigates salivary secretion.
Meyer (Copenhagen) describes adenoid vegetations.
Meyer operates on adenoids.
Pelechin introduces antisepsis in Russia.
Kahlbaum defines katatonia.
Boettcher discovers spermine.
Herling and Breuer discover self-regulation of respiration (role of vagus).
Schwender investigates symbiosis in lichens.
James Lenox founds Presbyterian Hospital (New York).

American Otological Society (Boston) founded.
East London Nursing Society founded.
Jewish Hospital (Chicago) founded.
Society of Czechoslovakian Physicians (Prague).
Société de médecine légale (Paris) founded.
English Pharmacy Act against unlicensed sale of poisons.
Pflüger founds Archiv für die gesamte physiologie (Bonn).
1869—University of Warsaw founded (moved to Rostov, 1915).
Esmarch introduces first-aid bandage.
Brown-Sequard introduces doctrine of internal secretions.
Wunderlich publishes treatise on clinical thermometry.
Virchow urges medical inspection of schools.
Goltz investigates nerve centers in the frog.
Gustav Simon excises kidney.
Oscar Liebreich demonstrates hypnotic effect of chloral hydrate.
Bevan Lewis investigates localization of function in the brain (histological).
J. P. Kirkwood publishes report on filtration of river waters.
Mendeléjeff and Lothar Meyer discover periodicity of elements.
American Journal of Obstetrics founded.
Torture abolished in Canton of Zug (Switzerland).
Faculté de Médecine (Nancy) founded.
Ceylon Medical College (Colombo) founded.
American Museum of Natural History (New York City) founded.
Chicago Medical College becomes Medical Department of Northwestern University.
American Editors Association (New York) founded.
First inspection of milk in Chicago.
G. V. Black, D.D.S., demonstrates physical properties of gold as applies to dental fillings.
Hospital at Osaka (Japan).
Massachusetts State Board of Health created.
Ontario (Canada) Act of Registration of Vital Statistics.
Tenement House Law (New York State).
1869-70—Pius IX restores Marcian Aqueduct (Rome) as Aquea Pia.
1869-71—Royal Sanitary Commission (Great Britain).
1869-1919—Mercy Hospital (Chicago) enlarged.
1870—Fritsch and Hitzig investigate localization of function of brain.
Thomas performs vaginal ovariotomy.
Saemisch describes serpiginous ulcer of the cornea.
Linoleum invented.
Beginnings of general central-heating in Germany.
Daremberg appointed to chair of medical history in Paris Medical Faculty.
Metropolitan Asylum Board (England).
Board of Health, District of Columbia, organized.
Women's Medical College (Chicago) organized (August 2), closed (1902).
Universities of Syracuse (New York) and Cincinnati (Ohio) founded.
Wisconsin Academy of Sciences founded.
Metropolitan Fever Hospitals (London) established.
Ural Scientific Society at Sverdlovsk.
Anthropological Society of Vienna founded.
Volkmann founds Sammlung Klinischer Vorträge (Leipzig).
First milk ordinance in Chicago.
1870-71—Franco-Prussian War (test of vaccination).
1870-74—Anton Dohrn establishes marine zoological laboratory at Naples.
1870-88—Medical and Surgical History of the War of the Rebellion published.
1871—Estabishment of German Empire and French Republic.
Darwin's Descent of Man published.
Weigert stains bacteria with carmine.
Hammarsten discovers role of fibrinogen, in coagulation of blood.
Hoppe-Seyler discovers nuclein in the blood-corpuscles.
English Local Government Board created.
Biological Station (University of Odessa) at Sebastopol (Crimea).
Boards of Health in California and Virginia.
Royal Anthropological Institute (London) founded.
Munich Society of Anthropology founded.
Italian Society of Anthropology (Florence) founded.
New York Orthopedic Hospital founded.
American Public Health Association established.
G. V. Black, D.D.S., brought out first dental engine.
1871-2—First American filter for water-supply at Poughkeepsie, New York.
1871-80—General widespread adulteration of food in the United States.
1871-1919—Local Government Board (England).
1872—University of Strassburg reopened.
University of Klausenburg (Kolozsvar) founded.
University of Adelaide (Australia) founded.
Billroth resects the esophagus.
H. C. Wood investigates heat-stroke.
Abbe introduces oil immersion lenses.
Merck introduces pyoctanin (metbyl violet).
Battey performs normal overiotomy.
Noeggérath describes effects of latent gonorrhea in women.
Typhoid fever epidemic from polluted water in Lausen (Switzerland).
Metropolitan Water Act (piping of water in London).
Milk station sestablished by Diet Kitchen Association (New York).
American Public Health Association hold first meeting (September 12).
Presbyterian Hospital (New York) opened.
Lacaze-Duthiers founds Biological Station at Roscoff.
Tokyo Library (Ugeno Park).
Infant Life Protection Act passed in England.
German Surgical Association (Berlin) founded.
Chicago Public Library founded.
Sociedad Científica Argentina at Buenos Aires.
Society of Chersonese Physicians at Cherson (Ukraine).
Introduction of Crédé's silvernitrate installation for infantile conjunctivitis.
Society of Physicians at Ekaterinoslav (Ukraine).
Medical Society at Stuttgart.
1873—Academy of Geneva (1559) becomes University.
Obermeier discovers spirillum of relapsing fever.
Nussbaum introduces nerve-stretching.
Esmarch introduces hemostatic bandage.
Gull describes myxedema.
Billroth excises the larynx.
Schwartze and Eysell devise mastoid operation.
Cuignet introduces retinoscopy.
Cerk Maxwell publishes treatise on electricity and magnetism.
Lippman's electrometer.
Cantani describes lathyrism.
Laryngological Society of New York organized.
Revaccination compulsory in Germany.
German Public Health Association (Berlin) founded.
League of German Medical Societies (Berlin).
Boards of Health in 134 American cities.
Institute of Municipal and County Engineers (Great Britain).
Ingalls removes renal calculus successfully.
Golei discovers staining method for studying nervous system.
1873-83—James Hobrecht constructs canalization system for sewage of Berlin.
1874—Cholera conference in Vienna.
International postal service.
Fiedler stresses danger of morphine habit.
Loi Roussel enacted for the protection of infants (France).
Ehrlich introduces dried blood smears and improves stain methods.
Kahlbaum publishes monograph on katatonia.
Miescher investigates nucleoproteids.
Willy Kühne discovers trypsin.
Sappey investigates the lymphatic system.
N. Pringsheim investigates chlorophyll.
Fryer builds furnace incinerator for refuse at Nottingham (England).
Imperial Hygienic Laboratory at Tokyo.
Veterinary Institute at Kazan.
Illinois law regulating food supply.
Society of Croatian Physicians at Agram.
Alfieri Institute of Social Sciences at Florence.
Sir Joshua Mason founds University of Birmingham as Mason College.
Salicylic acid isolated by Kolbe.
Polcarpine first recommended as a remedial agent.

Hansen discovers the bacillus of leprosy.
T. A. Emmett repairs lacerated cervix.
First application of galvanism to uterine myomata.
1875—University of Lemberg and Czernowitz founded.
École d'Anthropologie (Paris) founded.
Faculté de Médecine et Pharmacie (Lille) founded.
Landois discovers hemolysis from transfusion of alien blood.
Sir Thomas Barlow describes infantile scurvy.
Hardy and Gerard introduce pilocarpin.
Kühne and Nencki discover indol.
Lösch observes parasitic amebae in dysentery.
Weir Mitchell introduces rest cure.
Corfield establishes first public health laboratory in England.
Imperial Hygienic Laboratory (Osaka).
Chesebrough obtains vaseline.
Meat inspection compulsory in Germany.
English Public Health Act.
Paul Börner founds Deutsche medicinische Wochenschrift (Berlin).
English Sale of Food and Drugs Act.
Boston Medical Library founded (opened October 18).
1875-6—Cold-storage meat sent overseas.
1875-7—Pandemic cholera.
1875-82—Artisan's Dwellings Improvement Acts (England).
1875-1902—Gegenbaur edits Morphologisches Jahrbuch.
1876—Imperial Board of Health founded at Berlin (April 30).
Royal Sanitary Institute founded (London).
Johns Hopkins University founded.
Athenaeum ilustre (1632) becomes University of Amsterdam.
University of Bristol founded.
Royal Academy of Medicine founded at Rome.
Physiological Society of London founded.
Centennial Exposition, Philadelphia (July 4).
International Hygienic Congress at Brussels.
Sayre introduces gypsum corset for spinal deformities.
Kolbe isolates salicylic acid.
Eulenburg publishes handbook of industrial hygiene.
Lombroso publishes treatise on criminal man.
Fechner investigates synaesthesia.
Paquelin cautery introduced.
Porro introduces Caesarean section with excision of adnexa.
Koch obtains pure cultures of anthrax bacilli on artificial media.
Pictet invents artificial manufacture of ice.
Max Nitze introduces cystoscope.
Société française d'hygiène (Paris) founded.
Library, Medico-Chirurgical Faculty of Maryland, opened.
Establishment of Department of Health (Chicago).
Discovery of the resistant anthrax spores by Koch.
First application to treatment of uterine myomata of Batty's operation of oblation of appendages by Trenholme.
Museo Kircheriano (Rome) becomes Pigorini Museum of Prehistory and Ethnography.
Public baths and portable bathtubs (England).
Jablochkoff keolin arc-lamp invented.
Peter Dettweiler treats consumptives at Falkenstein (rest cure in open air).
American Dermatological Association (Boston) founded.
Bell telephone introduced.
American Chemical Society (Washington, D. C.) founded.
American Library Association (Chicago) founded.
1876-7—Raoult-Buntc burette for gas analysis.
1876-8—Friedrich Siemens establishes crematory (Gotha).
1876-1909—New Cook County Hospital (Chicago) begun and completed.
1877—T. J. Burrill (Illinois) discovers organism of pear-blight.
Pasteur discovers bacillus of malignant edema
Esmarch introduces aseptic bandage.
Ernst von Bergmann introduces corrosive sublimate antisepsis.
Bezold describes mastoiditis.
Paget decribes osteitis deformans.
Pictet and Cailletet liquefy gasses.
Stricker treats articular rheumatism with salicylic acid.
Winternitz publishes treatise on hydrotherapy.
Faculté de Médecine (Lyons) founded.
Illinois State Board of Health requires license for practice of medicine
1877-78—Russo-Turkish War.
Bollinger and Israel describe actinomycosis.
1877-1907—Progressive factory legislation in Massachusetts.
1878—Koch discovers causes of traumatic infection.
Von Basch measures blood-pressure with sphygmomanometer.
W. A. Freund excises cancerous uterus.
Marine Hospital Service (United States) takes over national quarrantine.
Downes and Blunt demonstrate bactericidal effects of light (Royal Society.)
Nägeli discovers that bacteria are not given off by moist surfaces.
Massachusetts law authorizing inspection of plumbing.
Foster founds Journal of Physiology (London)
Edison invents platinum wire (incandescent) electric lamp.
International Congress of Hygiene at Paris.
Chicago Pathological Society founded.
Billroth excises pylorus successfully.
Mathyson introduces plaster of Paris bandages.
1878-9—Welch, Prudden, Sternberg and Salmon introduce bacteriology in United States.
1879—Neisser discovers gonococcus.
Hansen and Neisser discover lapra bacillus.
Max Nitze introduces cystoscopy.
Manson discovers transmission of filariasis by mosquitoes.
Parkes Museum of Hygiene opened (University Hospital, London).
Billings and Fletcher start Index Medicus.
Bechem and Post employ low-pressure steam in central heating.
Parliament sanctions Thirlmere Aqueduct (96 miles) for water-supply of Manchester.
Factory and Workshops Act (England).
Hygienic Institute (University of Munich) opened by Pettenkofer (authorized 1872).
Anthropological Society of Washington (D.C.) founded.
German food law passed (May 14).
Pateur announces the infective agent in puerperal fever.
Lester Curtis (Chicago) introduces microscope in medical education in America
Sir William Crooke announces that matter is radiant.
1879-82—National Board of Health (United States).
1880—Pasteur discovers streptococcus, staphylococcus and pneumococoecus (Sternberg).
Pasteur immunizes against chicken-cholera by attenuated cultures.
Eberth isolates typhoid bacillus.
Miquel devises exact methods for enumerating bacteria in water.
Cold-storage meat successfully transported to Australia.
Pasteur and Sternberg demonstrate carriage of pneumonia bacillus in healthy mouth.
Sandstrom describes parathyroid gland.
Mosttig Moorhof introduces iodine dressings in surgery.
Balfour's Embryology published.
Evans discovers trypanosome of Surra (T. Evansi).
Merke (Berlin) investigates effect of steam upon pathogenic microorganisms.
Roeckner and Rothe devise method of purifying sewage by upward filtration.
Von Jaksch defines physiological and pathological acetonuria.
Billings publishes Index Catalogue (Vol. I).
American Surgical Association founded.
University of Tomsk (West Siberia) founded.
Cambridge Medical Society (England).
Government Calf Lymph Establishment at London.
F. Rizzoli founds Orthopedic Institute at Rome.
J. S. Billings constructs life-table from data of United States Census.
L. W. Meach compiles American Experience (Life) Table from data of 30 insurance companies.
Opthalmological Society (United Kingdom) founded.
Parliament sanctions Vyrnwy Aqueduct (68 miles) for water-supply of Liverpool.
London Association of Medical Women.
W. D. Mille, D.D.S., establishes the bacteriological origin of dental caries.
1880-1—Laveran discovers parasite of malarial fever.

1880-85—Bronx River Conduit (New York City) for water-supply constructed.
1880-89—Hawksley and Deacon construct Vyrnwy Water-Works (Liverpool supply).
1881—Billroth resects the pylorus for cancer, with success.
Ogston discovers staphylococci in abscesses.
Pasteur produces vaccine against anthrax.
Food and Drug Law (New York State).
Veterinary School at Lemberg (Galacia).
Chicago Pathological Society (organized April 10, 1878).
Vincenz Czerny introduces vaginal excision of uterine tumors.
Hahn performs nephropexy.
Wölfler introduces gastro-enterostomy.
Medin discovers epidemic nature of poliomyclitis.
Wundt investigates reaction-time.
Soxhlet estimates specific gravity of milk with lactodensimeter.
Kock introduces gelatine-media (solid plate cultures) and steam sterilization
Grimaux obtains codeine from morphine.
Government Animal Vaccination Establishment in Lamb's Conduit Street (London).
Russial Surgical (Pirogoff) Society (St.-Petersburg) organized.
Société d'odontologie (Paris) founded.
New York Polyclinic founded.
College of Physicians and Surgeons (Chicago) incorporated (October 4; opened, 1882).
Whooping-cough a leading cause of infant mortality in English vital statistics.
Carlos Finlay surmises transmission of yellow fever by Stegomyia fasciata (August 14).
Weiss (in Billroth's Clinic) described post-operative tintany.
Tyndall publishes Essays on the Floating Matter of the Air.
University College of Liverpool founded.
Valuable modification of the intraperitoneal method of treatment of the stump.
Dr. Francis L. Parker the first surgeon in the United States to obtain successful reunion of a large nerve by suturing.
1882—Koch discovers tubercle bacillus.
Gaskell investigates functions of vagus nerve.
Löffler and Schutz isolate bacillus of glanders in pure culture.
Bizzozero discovers blood-platelets.
Horbaczewski synthetizes uric acid from glycocoll and urea.
Walther Flemming investigates cell division.
Bertillon introduces personal identification by anthropometry (Bertillonage).
Max Sänger improves Caesarean section.
Liebreich introduces lanolin.
Langenbuch excises the gall-bladder.
Winiwarter performs cholecystenterostomy.
First code for inspection of plumbing (Lawrence, Massachusetts).
Holly introduces central (steam) heating at Lockport, New York.
Lépine and Blanc describe pleuro-peritoneal tuberculosis.
Grawitz describes renal hypernephroma.
Public Health Act (Canada) passed.
Provincial Board of Health (Ontario) organized.
Royal Academy of Medicine in Ireland (Dublin) founded.
New York Post-graduate Medical School and Hospital founded.
Society for Psychic Research (London) founded.
Prophylactic treatment of rabies by injection of virus (August 19).
Koch discovers comma bacillus of cholera.
Dr. R. A. Kinloch the first surgeon to suture perforation of the intestines for gun shot wounds.
Michael Reese Hospital (Chicago) opened.
Royal Society of Canada (Ottawa) founded.
1882-1904—Canizzaro and pupils investigate santonin group.
1882-1906—Emil Fischer investigates purin bodies.
1882-1913—Saccardo publishes Sylloge Fungorum (22 vols.).
1883—Edwin Klebs discovers diphtheria bacillus.
Kjeldahl introduces method of estimating nitrogen.
Golgi introduces silver stain for nerve cells.
Billroth and Senn anastomose ileum and colon.
Pasteur vaccinates against anthrax.
Metchnikoff states phagocytic theory of immunity.
Unna introduces ichthyol.
Koch discovers bacilli of cholera and infectious conjunctivitis.
Lawson Tait operates for extra-uterine pregnancy.
Adolph von Baeyer obtains formula of indigo.
Fehleisen obtains pure cultures of streptococci in erysipelas.
J. F. F. Hermans attributes faulty ventilation to humidity and overheating.
Kuhne and Chittenden demonstrate role of trypsin in digestion.
Conners (Cincinnati) performs gastrectomy.
A. F. A. King propounds theory of malarial transmission by mosquitoes.
Parke's Museum (London) rebuilt.
Pennsylvania Anatomical Law passed.
Italian Society of Surgery (Rome) founded.
Hemostatic effect of the fluid extract of hydrastis canadensis.
Antidiphtheric serum introduced by Behring.
Dr. Francis L. Parker performed successful transplantation of conjunctiva of rabbit to the human eye.
Faculty of Medicine at Beirut (Syria).
1883-5—Gustav Neuber (Kiel) introduces aseptic hospital.
1884—Nicolaier discovers tetanus bacillus.
Crede introduces silver nitrate instillations for infantile conjunctivitis.
Lustgarten isolates smegma bacillus.
Senn advances pancreatic surgery.
Ludwig Knorr discovers antipyrine.
Veit investigates tubal pregnancy.
Riedel introduces salipyrin.
Baumann discovers sulphonal (Kast, 1888).
Billroth excises pancreas for cancer.
Mikulicz operates for perforated typhoidal ulcer.
Gaffky obtains pure culture of typhoid bacillus (Eberth, 1880).
Löeffler obtains pure culture of diphtheria bacillus (Klebs, 1883).
Emmerich isolates colon bacillus (Escherich, 1886).
Hueppe investigates lactic acid bacilli in sour milk.
Chamberland invents porcelain bacterial filter.
Wilhelm Ebstein produces urinary calculi experimentally.
Bang and Stein cultivate bacilli of bovine tuberculosis.
Bernheim publishes treatise on suggestive-therapy.
Mergenthaler introduces linotyping.
Baner (St. Louis) operates for epilepsy, removing portion of skull.
Metchnikoff discovers the protective power of phagocytes.
Woelfer introduces gastroenterostomy.
Archaeologic Museum at Epidaurus.
International Health Exhibit (London).
German workmen's compensation law for industrial accidents.
United States Bureau of Labor establishes June 27; in effect July 1, 1885.
Carl Koller employs cocaine in eye surgery.
1884-8—Hamburg-Eppendorf Hospital constructed.
1884-1919—Emil Fischer investigates carbohydrates and ferments.
1885—O'Dwyer improves intuhation of the larynx.
Golgi discovers glia cells.
Yamanashi isolates ephedrine (Nagai, 1887).
Hermann Cohn introduces examination of school-children for visual acuity.
Bunge introduces hematogen.
Oscar Loewi discovers bactericidal property of formaldehyde (formalin).
Kossel isolates adenin.
Fraser introduces strophanthus.
H. Kümmel performs choledochostomy.
Bumm obtains pure cultures of gonococcus.
Hermann Rietschel appointed professor of heating (Technical High School, Charlottenburg).
Weismann publishes memoir on continuity of the germ plasm.
Ewald and Boas introduce test-breakfasts.
Halsted introduces conduction anesthesia.
Reilly (United States Army) constructs first incinerator.
Weigert introduces hematocylin staining of nerve-fibres.
Princess Helena Pavlovna founds Clinical Institute (St. Petersburg).
Medical Society at Omsk (Siberia).
Medical Association of Montana (Billings) founded.
L. Leonard Corning discovers spinal anesthesia and local medication of the cord.

Institute of Military Hygiene at Madrid.
Trudeau Sanitarium at Saranac Lake, New York.
1885-6—Cholera survey in England.
1885-7—Auer von Welsbach patents and improves incandescent lamp mantle (Welsbach burner).
1885-93—New Croton Aqueduct (New York City water-supply) constructed (31 miles).
1886—Nuttall notes bactericidal power of blood-serum.
Von Bergmann introduces steam sterilization in surgery.
Filatow describes glandular fever and fourth disease.
Hirschsprung describes megacolon.
Escherich investigates bacteria of intestines in infants.
Fitz describes pathology of appendicitis.
Marie connects acromegaly with the pituitary body.
Weir Mitchell and Reichert investigate serpent venom.
Marcel von Nencki introduces salol.
Soxhlet introduces sterilized milk for nutrition of infants.
Kopps, Cahn, and Hepp introduce acetanilide as antifebrin (Gerhardt, 1843).
Lehman investigates effect of industrial poisons.
Association of American Physicians (Boston) organized.
R. W. Felkin lectures on tropical medicine at Edinburg.
New York Cancer Hospital founded.
Chicago Polyclinic opened (July 26).
D. J. Price and associates improves technique of extraperitoneal method of treating the stump by which introligamentous tumors and those deep in the pelvis can be removed.
Sulphonal prepared by Baumann.
Strophanthus c recommended as a substitute for digitalis by Fraser.
Conseil de Santé (Quebec) founded.
Royal Institute of Public Health (London) founded.
Liverpool Biological Society founded.
Bruce isolates the bacteria of Brucella.
1887—Clark University founded (Worchester, Massachusetts).
Bruce discovers coccus of Malta fever.
Weichselbaum discovers meningococcus.
Salkowski discovers phytosterin (nucleus of vegetable fats).
Wagner von Jauregg proposes treatment of infection by counter-infection.
Fell introduces intratracheal anesthesia.
Harvey Reed sutures pericardium.
Sir John Simon publishes Public Health Reports.
D'Arsonval introduces high-frequency currents.
Howard Kelly performs hysterorrhaphy.
Gowers and Horsley operate on the spinal cord.
Gram introduces diuretin.
Sewall immunizes pigeons against rattlesnake venom.
Kast and Hinsberg introduce phenacetin.
Sloane Maternity Hospital (New York) opened.
Poor law medical officers abolished (England).
American Orthopedic Association founded.
Institute of Legal Medicine at Tokyo.
Psychological Association (Berlin) founded.
Newberry Library (Chicago) founded.
Amanda Dixon Jones performs vaginal hysterectomy of cancerous uterus.
Moses Gunn died.
1887-9—Hertz investigates electric waves.
1888—Medical Department, University of Tomsk (1880) opened.
Institut Pasteur founded.
Roux and Yersin isolate toxin of diphtheria.
Chantemesse and Widal introduce vaccines against typhoid fever.
Weil describes infectious jaundice (Botkin, 1889).
Victor Babes discovers piroplasm of carceag (Babesia).
Ducrey isolates bacillus of chancroid.
Nencki and Sieber isolate hematoporphyrin.
Zuntz and Geppert construct respiration calorimeter.
Celli demonstrates fly transmission of typhoid fever.
Gee describes coeliac disease (intestinal infantalism, Herter, 1918).
Parkes Museum merged into Sanitary Institute (Great Britain).
Baumann and Kast introduce trional.
Local Government Act (England).
Bacteriological (public health) laboratory at Providence, Rhode Island.
Experiment Station at Lawrence, Massachusetts.
Public Health (Bacteriological) Laboratory at Rome (Italy).
Alfieiri Institute of Social Sciences at Florence (1874).
Marine Biological Laboratory at Woods Hole (Massachusetts).
Société française d'Ophthalmologic (Paris) founded.
Museo pedagogico at Montevideo (Uruguay).
École de service de santé militaire (Lyons), founded.
American Association of Anatomists (Baltimore) organized.
American Association of Railway Surgeons (Chicago) founded.
Australasian Association for the Advancement of Science (Sydney) organized.
McEwen of Glasgow performed laminectomy for spinal paralysis.
Methods for making the stump intraabdominal but extraperitoneal, Polk; 1890 Kelly; 1890 Byford; 1892 Baer.
Total abdominal extirpation of myomatous uterus by use of clamp, by Lewis.
Prehistoric Museum at Weimar.
1888-92—Dercum describes painful obesity.
1888-1906—Carlsberg Glyptothek (Copenhagen) constructed.
1889—Johns Hopkins Hospital (Baltimore) and Hamburg-Eppendorf Hospital opened.
University of Fribourg (Switzerland) opened. (November 4).
Hofmeister investigates proteins (crystallized egg-albumen).
Buchner discovers alexins.
Von Mering and Minkowski produce experimental pancreatic diabetes.
Von Behring discovers antitoxins.
Max Einhorn illuminates the stomach (gastrodiaphamy).
Von Jaksch describes pseudoleukemic anemia.
Kitosato obtains pure cultures of tetanus bacillus.
Pfeiffer describes glandular fever and discovers influenza bacillus.
Pasteur, Chamberland, and Roux employ attentuated cultures in preventive innoculation.
Salkowski investigates autodigestion of organs.
Henry Head investigates mechanism of respiration.
Conn (United States) investigates bacteriology of milk.
Infant milk depots at Hamburg and New York (Henry Koplik).
Roux and Yersin point out danger of diphtheria convalescents as carriers.
Oscar Lassat introduces public baths (Berlin).
University of Madras qualifies public health officers.
Kocher performs hepaticostomy.
Vaughan and Novy teach bacteriology in Michigan.
Von Bergmann publishes treatise on brain surgery.
Queen Victoria's Jubilee Institute for Nurses chartered.
Society of Scientists and Physicians at Tomsk (Siberia).
Missouri Botanical Garden at St. Louis.
Laboratory of Vegetable Biology at Fontainbleau.
Brown-Sequard laid the cornerstone of endocrinology.
Gueniot suggests the section of skull for idiocy.
Operation performed by Lannelongue in Paris, Keen of Philadelphia, and Wyeth of New York.
Sanitary District of Chicago established.
Polk does total abdominal extirpation, fastening stump of vagina to abdominal incision, for prolapse.
First separate ligation of uterine arteries in their continuity and total exterpitation of this method, Stimson.
Introduction of cystoscope of Nitze.
1889-90—Pandemic influenza.
1889-91—Brown-Sequard establishes organotherapy.
1889-93—Denver Aqueduct (16½ miles, from Platte River) constructed.
1890—University of Lausanne founded (Academic, 1536).
Imperial Institute of Experimental Medicine (St. Petersburg) founded.
Koch introduces tuberculin and notes that tuberculous animals resist reinoculation.
Behring treats diphtheria with antitoxin.
Maffuci isolates avian tubercle bacillus. (B. gallinaceus).
Bowditch demonstrates non-fatigability of nerve.
W. D. Miller elucidates bacteriology of dental caries.
Pic standardizes treatment of tubercular peritonitis.
Loeb develops theory of tropisms.
Poehl isolates spermin from testis.
Tarchanoff introduces psychogalvanic reflex in diagnosis.
Emil Fischer nvestigates synthetic sugars.
Schleich introduces infiltration-anesthesia.
Head and Campbell investigate pathology of herpes zoster.
A. M. Babcock develops method of estimating fats in milk.

Czech Academy of Sciences and Arts at Prague founded.
Institute Pasteur at Saigon (Cochin China).
Biological Laboratory at Cold Springs Harbor, Long Island.
Dermatological Society at Vienna founded.
Botanical Garden at Tiflis (Siberia).
Volta Bureau (Washington) founded by Alexander Graham Bell.
German Pharmaceutical Society (Berlin) founded.
State Institute for Experimental Medicine at St. Petersburg.
Royal College of Physicians of Ireland (1867) revived.
Écoles annexés de médécine navale at Brest, Rochefort, and Toulon.
Archival Repository of Medical Literature at Berlin.
1890-93—Behring and Kitasato develop antitoxin treatment of diphtheria.
Pandemic influenza.
1890-1909—Haberlandt investigates sensation in plants.
1891—Institute for Infectious Diseases (Berlin) opened under Koch.
Lister Institute for Preventive Medicine (London) opened.
Weldeyer formulates the Neuron Theory (Ramón y Cahal, 1891).
Quincke introduces lumbar puncture.
Walter Snow urges recirculation of factory-air.
Witzel performs gastrostomy (Kader, 1896).
Halsted introduces rubber gloves in operative surgery.
Michelson invents the interferometer.
Bier introduces artificial hyperemia.
Von Bergmann standardizes general aseptic ritual in surgery (Koch, 1881; G. Neuber, 1882-5).
Peter Dettweiler builds first sanatorium for phthisical patients at Ruppertshain.
Gabriel Lippmann introduces color photography.
S. G. Hadin invents hematocrit.
S. M. Copeman introduces glycerinated lymph for smallpox vaccination.
Biological station at Gluboke Lake Russia).
Institute de oftalmologia at Lisbon.
Stanford University (California) founded.
Association of American Medical Colleges (Chicago) founded.
Department of Medicine, University of Texas (Galveston) founded.
Charles Theodore Parkes died.
United States meat inspection law passed.
Michel's clamp and other devices for the closure of operation wounds.
1891-93—S. P. Langley experiments with aeroplanes.
1891-1902—Manson investigates filariasis.
1892—State Hygienic Institute at Hamburg.
Smith and Kilbourne demonstrate tick transmission of bovine piroplasmosis (Texas fever).
Welch and Nuttall identify gas bacillus (Bacillus aerogenes).
Halsted successfully ligates subclavian artery (first portion).
Kossel and Neumann discover pentose in vegetable substances.
Ivanovski describes mosaic tobacco disease.
Calmette investigates serum therapy of cobra-poisoning.
Francis Galton introduces identification by fingerprints (dactyloscopy).
Von Jaksch signalizes value of leucocytosis in diagnosis.
Salkowski and Jastrowitz describe pentosuria.
Sedgewick emphasizes necessity of fly-control in prevention of typhoid fever.
Bokay notes relation between varicella and herpes.
Frank Hartley resects Gasserian ganglion for trigeminal neuralgia.
Hans Buchner shows effect of sunlight on self-purification of streams.
Medical inspection of schools in New York City.
Laboratory of Hygiene (University of Pennsylvania) opened in Philadelpbia.
Instituto Bacteriologio de Camara Pestana at Lisbon.
H. L. Coit organizes Medical Milk Commission (certified milk).
Royal Japanese Institute for Infectious Diseases at Chirokane (Tokyo).
American Psychological Association (New York) founded.
Wistar Institute of Anatomy and Biology (1808) incorporated (Philadelphia),
Public Health Act (Manitoba).
Pfeiffer finds the organism of influenza.
V. Noorden studies metabolism.
Invention and use of Murphy Button (Medical Record, 1892, vol. 42, page 665).
Cholera epidemic in Hamburg.
National Medical Society (Norsk Medcinske Selskab) at Christiana (Oslo).
Bibliographical Society (London) founded.
Biological station at Bergen (Norway).
Musée greco-romaine at Alexandria (Egypt).
1892-1900—New Chicago Drainage Canal (28½ miles) constructed.
1892-1907—Illinois and Mississippi (Hennepin) Canal (Chicago sewerage) constructed (opened October 24, 1907).
1892-1913—Sherrington investigates reciprocal innervation of antagonistic muscles.
1892-1918—Haldane invents standard apparatus for estimating respiratory exchange (gasometry of the blood).
1893—Finsen treats smallpox pustules by exclusion of ultraviolet light.
Gilbert discovers paracolon and parathyroid bacilli.
G. R. Fowler performs pulmonary decortication.
Brunton and Cash investigate relation of pharmacological action to chemical structure.
Emil Fischer investigates the synthesis of glucosides.
Feodor Krause excises Gasserian ganglion for trigeminal neuralgia.
Anderson describes first mechanical water-filter.
First open (slow sand) filtration of water supply at Lawrence, Massachusetts.
Herman M. Biggs establishes Diagnostic Laboratory in New York City.
Nathan Straus establishes milk stations in New York City (1893-1919).
Isolation Hospital Act (England)
Nurses' Settlement on East Side (New York City) founded by Lillian Wald and Miss Brewster.
Institut international de sociologie Paris.
International Cholera Congress at Dresden.
Society of Anesthetists (London) England.
Total abdominal extirpation of the uterus with suppurating appendages, as a matter of election (Baldy, Krug, Polk).
Gilcbrist describes blastomycosis.
Edgar L. and Elmer Apperson and Charles B. Duryea build the first American made commercially successful motor vehicle.
Frederich G. Banting and Dr. Best isolate insulin.
Bruce designates the bacteria brucella as micrococcus melitensis.
Library, Medical Society of Denver, establisbed.
1893-9—Consolidation (storage and interconnection of conduits) of London water-supply.
1893-7—Erwin Smith investigates bacterial diseases of plants.
1893-1928—Freud, describes sexual (anxiety) neuroses and develops psycho-analysis.
1894—Kitasato and Yersin discover plague bacillus.
Kirstein devises direct laryngoscopy.
Yersin demonstrates indentity of human and rat plague.
Dukes describes "fourth disease."
Paltauf (Vienna) takes over mass-production of diphtheria (antitoxic serum).
Wölfler performs gastro-gastrostomy.
Bruce dicovers trypanosome of magana (T. Brucei).
Rouget discovers strypanosoma of dourine (T. equiperdum).
Banti describes splenic anemia.
Baumann discovers threoiodin.
Medical inspection of scbools begun in United States.
Workmen's Compensation Act in Norway.
American Society of Heating and Ventilating Engineers founded.
New York Herald antitoxin fund turned over to Health Department.
Pasteur Institute in Tunis.
Cleveland (Obio) Medical Library Association founded.
Local Government Act (England).
International Loan Library for the Blind (Deutsche Zentralbücherei) at Leipzig.
Child Study Society (London) founded.
State Hydrophobia Vaccine Institute at Vienna.
Psychiatric Clinic at Rio de Janeiro.

Wellcome Physiological Research Laboratory (London) founded.
Institute Solvay (de physiologie) founded at Brussels.
Field Museum of Natural History (Chicago) founded.
University Biological Station at Dröbak, near Oslo (Norway).
David Bruce found that sleeping sickness is spread by the tsetse fly.
Finlay's theory of the relation o fthe mosquito to the spread of yellow fever.
Schleich introduces infiltration anesthesia.
Sauerbach's Pneumatic Cabinet and underpressure contrivance introduced.
Eastman does eucleation of the stump as well as the myoma by use of serrated gouge, without severing the uterine arteries.
Krug—total extirpation of uterus in cases of extrauterine pregnancy, where the tube which is not pregnant is diseased.
1894-1924—J. N. Langley finances Journal of Physiology (founded 1878).
1895—Röntgen discovers X-rays.
Pfeiffer discovers bacteriolysis (Pfeiffer's phenomenon).
Finsen treats lupus by concentration of ultra-violet light.
Ronald Ross demonstrates development of malarial parasite in mosquito.
Calmette introduces serum against snake venom.
Kocher investigates gunshot wounds from small-calibre bullets.
Zwaardemaker investigates smell and odors with olfactometer.
Wilhelm His reforms anatomical nomenclature.
Marconi introduces wireless telegraphy.
Cameron introduces septic tanks for purifying sewage sludge.
Herbert Haviland Field establishes Concilium Bibliographicum at Zürich.
Nobel Prize Foundation at Stockholm.
Proctor Marble Company (Vermont) employs nurses for sick employees.
Frederick Wilhelms Institut (Berlin) becomes Kaiser-Wilhems Akademie.
New York Public Library founded.
German Museum for Deaf-Mute Instruction at Leipzig.
Bureau of Laboratories (New York Health Department) established.
Imperial Institute of Veterinary Research at Muktesar (India).
Pasteur Institute for Indo-China at Uha-Trang (Annam).
State Serotherapeutic Institute at Vienna.
German Central Committee for Prevention of Tuberculosis at Berlin.
Pasteur Institute at Lille.
Institution of Sanitary Engineers (London) founded.
Instituto Médico at Sacre (Bolivia).
Universid Central (Quito, Ecuador) recognized, with Medical Faculty.
First diphtheria antitoxin issued by the Chicago Health Department (October 5).
Louis Pasteur died.
Buny demonstrates the bacillus ahortus.
École d'application des médecins et pharmaciens stagiaires (Tulon) founded (July 26).
Lane Medical Library (San Francisco) founded.
1895-1901—Jules and Augusta Dejerine puhlish treatise on anatomy of the nerve-centres.
1896—Max Gruber discovers bacterial agglutination.
Murphy performs successful circular anastomosis of blood-vessels.
Joboulay performs sympathectomy for exophthalmic goitre.
Wright, Pfeiffer and Kolle vaccinate against typhoid fever.
Widal and Sicard introduce agglutination test for typhoid fever.
Leo Arons (Berlin) invents mercury vapor lamp (elimination of red or orange rays).
Friederich Bezold devises tuning-fork method of testing and training deaf-mutes.
Bourquelot and Bertrand discover tyrosinase.
W. J. Dibdin and Schweder invent metho dfor bacteriological putrifaction of sewage.
Casper employs ureteral cystoscopy and catherization in diagnosis of renal diseases.
Leopold Freund treats hypertrichosis with Röntgen rays.
Hammarsten discovers pentose in the pancreas.
Merling introduces eucaine.
Farina and Rhn operate on the heart.
Leichtenstern describes essential (three-day) influenza.
University of Lyons founded (July 10).
University of Caen (Calvados) revived.
First Congress of German Heating and Ventilating Engineers (Berlin).
Hermann Rietschel starts Testing Institute for heating and ventilating appliances at Charlottenburg (new buildngs, 1906).
Steinbeck opens Röntgen Institute at Stockholm.
Welch founds Journal of Experimental Medicine.
Institute for Infectious Diseases at Bern (Switzerland).
Association française d'urologie (Paris) organized.
Institut Pasteur de la Loire-Inférieure (Nancy) founded (opened 1898).
Duehrssen's method of vaginal Caesarean section.
Hughes names undulant fever.
Physician's Temperance Society (Verein Abstinenter Aerzte) at Berlin.
Bacteriological Institute at Kiev (Ukraine).
Finsen's Phototherapeutic Institute (Medicinske Lysinstitut) at Copenhagen.
Bacteriological Laboratory at Bombay.
National Union of Hungarian Physicians at Budapest.
Botanical Garden at New York.
1896-9—Schenk describes sporotrichosis.
1897—Shiga discovers dysentery bacillus.
Bordet discovers bacterial hemolysis.
Emil Fischer synthesizes caffeine, theobromine, xanthin, guanin, and adenin.
Flugge states theory of droplet infection.
Jonnesco performs sympathectomy for glaucoma.
Ogata finds plague bacillus in fleas of plague-ridden rats.
Nuttall demonstrates fly-transmission of plague bacilli.
Ehrlich states side-chain theory of immunity.
E. Van Ermengem discovers Bacillus botulinus.
E. Schigg and H. Kümmel treat lupus successfully with Röntgen rays.
J. V. Laborde introduces artificial respiration.
Horton Smith shows danger of chronic (urinary) typhoid carriers.
Stroganoff introduces sedative (preventive) treatment of puerperal eclampsia.
Nathan Brill describes mild endemic typhus in New York.
Germano shows that dryness is fatal to bacteria.
Apostoli introduces high-frequency electrotherapy (arsonvalisation) in gynecology.
Kyoto Imperial University (Japan) founded.
Röntgen Society (London) founded.
Marine Biological Station at Westport (Scotland).
Institut national d'hygiéne et de bacteriologie (Luxemburg) founded.
Sir Ronald Ross discovers that malarial fever is transmitted by the bite of the anopheles mosquito and not bad air, miasma, or infested water.
Recognition of action of precipitin and agglutinin in sero-analysis.
Haffkine's serum used successfully against the huhonic plague in India.
Rehn first successfully sewed a wound of the heart.
G. W. Crile's experimental research into surgical shock.
American Medical Association incorporated in Illinois (September 25).
Chicago Medical Society incorporated.
G. C. Whipple establishes Mount Prospect Laboratory (Brooklyn Water Works).
New York (State) adopts compulsory notification of tuberculosis (H. M. Biggs).
Municipal Milk Station at Rochester, New York.
1897-8—Mac Callum demonstrates sexual conjugation of parasite of avian malaria.
1897-1902—Cannon investigates movements of stomach and intestines by Rontgenoscopy.

1897-1904—Ramón y Cajal publishes treatise of the nervous system.
1898—P. and S. Curie discover radium.
Loeffler and Frosch investigate filterable viruses.
Looss demonstrates mechanism of hook-worm infection.
Theobald Smith isolates and cultivates bovine tubercle bacilli.
Emil Fischer isolates the purin nucleus of uric acid transformation.
Dreser introduces heroin.
Simonds demonstrates transmission of bubonic plague by fleas.
Bordet and Tsistovich demonstrate agglutinins, hemolysins and precipitins in blood-serum treated with alien blood-corpuscles.
Killian introduces direct bronchoscopy.
Vincent describes spirillo-bacillary angina.
Tschirch explains chemical mechanism of common purgatives.
L. O. Howard publishes Bulletin on mosquito-eradication.
Arloing and Courmont introduce sero-agglutinations of tubercle bacilli in diagnosis.
Davis and Varnier employ X-rays in obstetric diagnosis.
Affiliation of Rush Medical College with University of Chicago (January 5).
Cornell University Medical College (New York City) founded.
Pabloff investigates digestive action of glands.
London College of Physiology founded.
Faculty of Medicine at Porto Alegre (Brazil) organized.
Phillipine Health Service (Manila) organized (Board of Health, 1901).
Bavarian Hydrologic Station at Munich.
Prehistoric Museum at Ventimiglia (Italy).
Institute for the Study of Malignant Disease (New York) founded.
Mechanical water-filter installed at Elmira, New York.
Experiments on chlorine purification of sewage at Hamburg.
Samuel W. Abbott publishes second Massachusetts Life-table.
State Sanitarium for Tuberculosis in Massachusetts.
Marchoux founds Bacteriological Laboratory for East Africa at St. Louis (Senegal).
German Pathological Society (Dresden) organized.
Washington Academy of Sciences organized.
Biological Experiment Station (Harvard University), at Cienfuegos, Cuba.
1898-1908—Zeppelin experiments with dirigible airships.
1898-1915—Sherrington investigates decerebrate rigidity.
W. T. Porter finances American Journal of Physiology.
1898-9—Walter Reed and others demonstrate that typhoid fever may be transmitted by contact, by flies, by water and food pollution, by unclean hands, by polluted water or milk.
1898-1920—Langley investigates autonomic system.
1899—Reed, Carroll, Lazear, and Agromonte demonstrate mosquito transmission of yellow fever.
Jacques Loeb produces chemical activation of sea-urchin egg.
Ramón y Cajal describes histology of cerebral cortex.
Weichselbaum and Jeager isolate meningococcus.
Grassi and Bignami prove that anopheles is sole transmitter of malaria.
Nuttall summarizes role of insects as vectors of communicable diseases.
Spiller introduces chordotomy of neuralgia.
Kossel states theory of protamin nucleus in protein transformations.
H. Dreser introduces aspirin.
Dewar liquefies air, oxygen, and hydrogen.
Beijerinck isolates filterable virus of mosaic tobacco disease.
Albert Hazen construct sslow sand water-filter for Albany, New York.
National University at Peking (China) founded.
London School of Hygiene and Tropical Medicine founded.
Liverpool School of Tropical Medicine founded.
Edinburg School of Tropical Medicine founded.
Instituto Nacional de higiene de Alfonso XIII (Madrid) founded.
Medical Library Association (United States) founded.
Ehrlich's Institute for Experimental Medicine (Frankfurt) founded.
Children's Court at Chicago.
Moscow Odontological Society founded (disbanded 1919; revived 1922).
New York Zoological Park (Bronx) opened.
Societies of Neurology and of Pediatries founded at Paris.
Royal Hygienic Institute at Posen.
Hackett Medical College (Canton, China) founded.
Cancer Commission of Harvard University founded.
American Anthropological Association (Washington, D. C.) founded.
Parliament authorized Derwent Aqueduct (60 miles) for water-supply of Derby, Leicester, Sheffield and Nottingham.
Vital Brazil founds Instituteo Butantan (São Paulo, Brazil) for manufacture of serum against snake-venom.
1899-1900—Reed completes demonstration of mosquito transmission of yellow fever.
Steinbeck treats cancer with Rontgen rays.
1899-1906—Emil Fischer investigates amino-acid constituents of protein molecule.
1900—Gärtner invents ronometer for measuring blood-pressure.
Bier introduces spinal (cocaine) anesthesia (Corning) into general surgery.
Widal and Ravaut introduce cytodiagnosis.
Gersung introduces prothetic (paraffin) injections.
Wertheim devises radical operation for uterine cancer.
Kastle and Loevenhart demonstrate reversibility of enzymes (lipase).
Sjögren and Stenbeck treat superficial epithelioma with X-rays.
A. Walkhoff shows destructive effect of radium on the tissues.
Willstätter and Bode produce synthetic cocaine.
Park recommends control of milk (New York City) by bacterial tests.
Woodhead disinfects water-supply of Maidstone (England) with chlorine after typhoid epidemic.
Danysz starts experimental epidemiology.
Mechanical water-filter installed at Lorraine (Ohio).
University of Odessa founded.
Hartmann-Bund (Verband der Aerzte Deutschlands) founded at Leipzig.
Institute for Medical Research at Kaulu Lampur (Federated Malay States).
American Association of Pathologists and Bacteriologists (Boston) founded.
American Röntgen Ray Society founded.
Yale Botanical Garden at New Haven.
Institut general psychologique (Paris) founded.
College of Physicians and Surgeons (Chicago) becomes College of Medicine, University of Illinois (May 1).
German Central Cancer Committee (Berlin) founded.
Royal Hygienic Institute at Beuthen (Upper Silesia).
Volga Biological Station at Saratov (Russia).
Philippine Library and Museum (Manila) established.
Baylor University College of Medicine (Dallas, Texas) founded.
Charles J. Whalen discovers specific action of guaiacol in malaria.
Sir Almroth Wright prepares vaccination against typhoid fever.
1900-1903—Leishman and Donovan discover protozoön of kala azar.
1900-1904—Pschorr and Vongerichten demonstrate phenanthren nucleus of morphine and codeine.
1900-1906—Mills and Spiller describe unilateral type of spastic spinal paralysis.
1900-1922—Sixteen Indian cholera epidemics radiate from Kimbh Hardwar fair.
1901—De Vries states mutation theory.
Dutton and Ford discover trypanosome of sleeping sickness (Trypanosoma gambiense).
Bordet and Gengou demonstrate complement-fixation.
Aschkinazi and Caspari show that radium checks growth of bacteria.
Dantes and Bloch treat lupus with radium.
Sjögren treats lupus with x-rays.
Landsteiner discovers blood grouping (iso-agglutination).
Ayerza describes cyanotic sclerosis of pulmonary artery (cardios negros).
Emil Fischer devises ester method of isolation of amino-acids.
Gowland, Hopkins and Cole isolate trytophan (Stadelmann, 1890).
Felix Marchand investigates wound-healing.

Takamine isolates adrenaline.
Pavloff isolates enterokinase.
Otto Conheim discovers erepsin.
Nencki and Machlevski show relationship of hemoglobin and chlorophyll (hemopyrrol).
Uhlenhuth introduces precipitin test for blood-stains (Bordet, 1898).
Suddeck investigates ether intoxication.
Planck announces quanta theory of emission of radiant energy (verified by Einstein, 1905).
Temper and Pfutzner constructs central-heating plant at Dresden.
Elmassian discovers trypanosome of mal de caderas (T. Elmassiani).
Lister Institute of Preventive Medicine (London) founded.
Rockefeller Institute for Medical Research (New York) opened.
Instituto Oswaldo Cruz (Rio de Janeiro) opened.
Biometrika founded by Galton, Pearson, and Weldon.
Hygienic Laboratory, United States Public Health Service, opened.
State Institution for Investigation of Food Substances at Berlin.
German Orthopedic Society (Berlin) founded.
German Society for School Hygiene (Berlin) founded.
German Society of History of Medicine and Science (Leipzig) founded.
State Serum Institute at Copenhagen.
Medico-Legal Society (London) founded.
Award of Nobel Prizes begun.
Museum of History of Medicine in Hôtel Dieu at Rouen.
Philippine Health Service (Manila) established (September 29).
Philippine Bureau of Science (Manila) established.
Nuttall founds Journal of Hygiene.
1901-05—Sanitary Institute (London) gives lectures to teachers on applied hygiene.
1901-26—Frazier introduces section of posterior (Sensory) trigeminal roots for neuralgia.
1902—Carrel introduces new methods of vascular anastomosis and transplantation of tissues.
G. Kelling introduces exploration of peritoneal cavity by inflation.
Albers-Schönberg invents compression-diaphragm for Röntgenography.
Emil Fischer, Leuchs, and Weigert synthetize serin, glucosamin, and lysin.
R. Herzog discovers site of Asclepicion at Cos.
Helzknecht devises method of sodimetry for X-rays.
Robert Weir performs appendicostomy.
P. C. Hewitt perfects quartz mercury vapor lamp.
McClung isolates sex-chromosomes.
Von Pirquet postulates formation of antibodies as termination of incubation period.
Ravenel isolates bovine tubercule bacillus from a tuberculous child.
Preston Kyes shows lecithin to be the complement of cobra-hemolysin.
Rutherford and Soddy demonstrate radio-activity of thorium and its emanation.
Schild introduces atoxyl.
H. von Tappeiner investigates photodynamic substances.
Steinbuchel introduces morphine-scopolamine anesthesia in obstetrics.
Finney performs gastro-duodenostomy.
Theiler discovers trypanosome of galziekte (T. Theileri).
J. R. Ewald investigates end organ of octavus (auditory) nerve.
John McCormick Institute for Infectious Diseases (Chicago) founded.
General Education Board (Rockefeller Foundation) New York.
Carnegie Institution of Washington founded.
Imperial Cancer Research Fund (England) founded.
Royal Academy Medical College (London) founded.
Society of Bavarian Psychiatrists (Munich) founded.
Institute for Biological Experimentation at Vienna.
Société française d'histoire de médécine (Paris) founded.
School of Tropical Medicine (Lisbon) founded.
Institut supérieur de vaccine (Vaccine Service of the Academy of Medicine) at Paris.
Society of German Food Chemists (Berlin) founded.
German Society for Prevention of Venereal Diseases (Berlin) founded.
National Serotherapeutic Institute at Vienna (new building, 1907).
American Anthropological Society (Andover, Massachusetts) organized.
Société de médecine physique (Antwerp) organized.
Metropolis Water Act (England).
Christian Fenger died.
1902-3—Jensen propagates cancer through several generations of mice.
1902-6—Bayliss and Starling investigate hormones.
1903—Metchnikoff inoculates higher apes with syphilis.
Von Pirquet and Schick identify serum-sickness with anaphylaxis.
Rollier treats surgical tuberculosis with ultra-violet light at Leysin.
Koch stresses danger of healthy typhoid carriers as agents of infection.
Emil Fischer and von Mehring introduce veronal.
Arthus produces local anaphylaxis.
Johannsen investigates pure line inheritance.
Danysz shows selective action of radium on malignant tumors.
Einthoven invents string galvanometer.
Albers-Schönberg notes sterilizing effect of X-rays on gonads.
Bruce demonstrates transmission of sleeping sickness by tsetse fly.
Benno Crédé introduces collargol.
Dunbar discovers toxin and antitoxin (pollantin) of hay fever.
Emil Fischer devises method of synthetizing polypeptids.
Josué produces experimental arteriosclerosis by adrenalin injections.
Mosetig-Moorhof devises method of plumbing bony cavities.
Posternac isolates phytin.
J. W. Wright discovers Leishmania bodies in endemic ulcers.
Riva Rocci invents sphygmomanometer.
Ramsay and Soddy demonstrate transmutation of radium into helium.
Schaudinn differentiates Entamoeba histolytica from E. coli.
Siedentopf and Zsigmondy invent ultramicroscope.
Buchner and Meisenheimer discover enzymes of lactic acid and vinegar fermentation.
Almroth Wright and Douglass investigate opsonins.
Castelloni discovers Trypanosoma Ugandae.
Senn treats leukemia with Rontgen rays.
Dejerine describes thalmus opticus syndrome.
Janet describes psychasthenia.
Vaccination obligatory in Spain.
Henry Phipps Institute for Tuberculosis (Baltimore) opened.
American Society of Tropical Medicine (Philadelphia) founded.
Wellcome Tropical Research Laboratories at Khartoum (Soudan).
American Genetic Association (Washington) founded.
Société de médecine physique (Paris) founded.
Berlin Museum of Safety founded.
Germanic Museum (Munich) founded.
Permanent Exhibit for Industrial Welfare (Berlin) opened.
German Society for Prevention of Quackery (Berlin) founded.
Illinois Medical Society incorporated.
Control of hookworm disease in Porto Rico by Ashford.
1903-4—Frosch, Drigalski, and Donitz, establish theory of typhoid (bacillus) carriers.
Bacteriological Institute at Zagreb (Jugoslavia).
1904—Atwater invents respiration calorimeter.
Sauerbruch introduces pneumatic cabinet for thoracic surgery.
Chittenden investigates minimum food requirements.
Max Coletta introduces digalen.
Fourneau introduces stovaine (anesthesia).
Giemsa introduces modification of Romanovsky stain (1890) for protozoa (plasmodium and spirochaetae).
Schmittenhelm isolates oxydase.
F. Stolz determines composition of adrenalin.
Weichardt investigates toxins of fatigue.
Arneth employs blood-picture in diagnosis.
Helene Stöcker founds Die Neue Generation.

Gradenigo describes sixth nerve syndrome.
Foveau de Courmelles treats uterine myonata by X-rays.
University of Sofia (Bulgaria) founded (Medical Faculty, 1918).
Deutsche physiologische Gesellschaft (Leipzig), founded.
Physiological Society (Philadelphia) founded.
Ethnological Society (London), founded.
National Tuberculosis Association (New York) founded.
Society for Experimental Psychology (Berlin) founded.
Academia Nacional de Medicina (Caracas) founded.
Tortugas Laboratory (Carnegie Biological Station) at Key West (Florida).
Association international des médécins mécano-thérapeutes (Brussels) founded.
Pineles publishes clinical and experimental contributions to the physiology of the thyroid and parathyroid.
Todd and Dutton discover cause of relapsing fever—a spirillum conveyed to the human by the bite of lice and ticks.
1905—Schaudinn discovers parasite of syphilis. (Treponema pallidum).
Bordet and Gengou isolate bacillus of whooping-cough.
Vassale employs parathyroid extract in tetany.
Chaput employs stovaine in spinal anesthesia.
Konig describes osteochondritis dissecans.
Winter resuscitates the heart by adrenalin injections.
Flügge and pupils show effects of vitiated air to be due to heat and humidity.
Dutton and Koch demonstrate tick-transmission of African relapsing fever.
Alfred Einborn discovers novocaine.
Ehrlich demonstrates change of experimental carcinoma transplants into sarcoma.
Koch maintains that sleeping sickness is transmitted by several species of Glossina.
Levaditi employs Ramón y Cajal's silver stain for spirochetes.
Chapin abandons terminal disinfection at Providence (Rhode Island).
Wright brothers make successful flight with aeroplane.
Kaiserin Augusta-Victoria Haus (for combating infantile mortality) at Berlin.
German Röntgen Society (Berlin) founded.
Société de pathologie exotique (Paris) founded.
King Edward VII College of Medecine (Singapore) founded.
American Society for Psychical Research founded.
Carnegie Laboratory for Plant Physiology at Tucson (Arizona).
Institute of Opbthalmic Opticians at London.
American Sociological Society (Chicago) founded.
Vajirañana National Library of Siam at Bangkok.
Schaudinn and Hoffman discover spirochaeta pallida.
1905-7—F. S. Lee investigates fatigue.
1906—Wasserman introduces serum diagnosis of syphilis (modified by Naguebi 1911).
Bárány develops theory of vestibular nystagmus.
Einthoven obtains telecardiogram from the heart at a distance.
Von Pirquet states doctrine of allergy.
Ransoboff performs discussion of the pleura.
Voelcker and von Lichtenberg examine kidney with X-ray (pyelography).
Perseval flies air ship.
E. Beck introduces bismuth paste in Röntgenography.
MacDougal demonstrates heredity of experimentally acquired characteristics in plants.
Neisser demonstrates susceptibility of lower apes to syphilis.
Federal Food and Drug Act (United States) passed (June 30, 1907).
Provision of Children's Meals Act (England).
Compulsory medical inspection of schools in Massachusetts.
American Association for Labor Legislature founded (February 15).
National Committee on Child Labor (United States) founded.
Courses in public hygiene instituted at University of Pennsylvania.
Carnegie Nutrition Laboratory (Boston) opens.
Institute for Experimental Cancer Research at Heidelberg.
Institute for Experimental Pedagogics and Psychology at Leipzig.
Chicago Tuberculosis Institute incorporated and opened.
American Society of Biological Chemists (Ann Arbor) founded.
Chemotherapeutic Institute (Georg Speyer Haus) at Frankfort-on-the-Main.
Institute for Applied Psychology at Berlin.
State School of Tropical Medicine (Brussels) founded.
Berlin Society for History of Medicine and Science founded.
Pathological Society of Great Britain and Ireland (Cambridge) founded.
Fernand Henrotin died.
First systematic bacterial inspection of Chicago milk from dairy farms.
Kaiserin Friedrich Haus (for Post-Graduate Medical Study) at Berlin.
1906-13—Willstätter investigates chlorophyll.
1906-20—Gowland Hopkins investigates accessory food-factors (vitamins).
1906-25—Blair Bell introduces use of pituitrin as oxytocic in lingering labor.
1907—Von Pirquet introduces cutaneous reaction in tuberculosis.
Calmette and Wolff-Eisner introduce conjunctival reactions in tuberculosis.
Theobald Smith suggests use of toxin-antitoxin in diphtheria (Behring, 1912).
Emmerich and Löw obtain pyocyanase from Bacilluspyocyaneus.
Ricketts demonstrates tick-transmission of Rocky Mountain fever.
Emil Fischer obtains linkage of 18 amino-acids (protein molecule).
Ramsay obtains lithum by transmutation (irradiation) of copper.
Willstätter and Hochader obtain phytol nucleus from chlorophyll molecule).
Adolph Schmidt employs functional test-meals in diagnosing intestinal disorders.
Zwirn performs kerotoplasty or corneal opacity.
Fletcher and Hopkins demonstrate role of lactic acid formation in normal muscle contraction.
Benedict and Milner show that excess CO_2 is harmless in cool room.
Ramsay Hunt describes geniculate ganglion syndrome.
University of Saskatchewan (Saskatoon) founded (opened 1909).
Tokohu Imperial University at Sendai (Japan).
International Association of Medical Museums (Montreal) founded.
Royal Society of Tropical Medicine and Hygiene (London) founded.
Royal Medical and Chirurgical Society (1805) rechartered as Royal Society of Medecine (London).
Bureau international contre l'alcoolisme founded at Stockbolm.
International sleeping sickness congress in London.
Italian Society of Medical History (Florence) founded.
Notification of Births (Act) England.
Angelo Mosso founds Monte Rosa Institute (University of Turin) at Alagna Sefia).
Clyde Snook, Edwin W. Kelly and G. Herbert White (America) develop high tension transformer for X-ray tubes.
Sudboff founds Archiv für Geschichte der Medizin (Leipzig).
1907-8—Marage invents vocal siren (test for deafness) and photographs the voice.
1908—Leonard Finlay produces experimental rickets by deficient diet.
Bernstein investigates temperature-coefficients of muscular energy.
Buerger describes thrombo-angiitis obliterans.
Kamerlingh Onnes liquefies belium.
Willstätter and Benz show crystallized chlorophyll to be a magnesium product.
Gabriel Lippman introduces relief-photography.
Zeppelin constructs improved air-ship.
Peking Union Medical College founded by Rockefeller Institute.
University of the Philippines (Manila) founded (College of Medicine, 1910).
Royal Army Medical College opened at Millbank.
Tropical Diseases Bureau (London) founded by Colonial Office.
Psycho-neurological Institute (St. Petersburg) founded.
Spanish Association for the Advancement of Sciences (Madrid) founded.

Institut für Radiumforscbung at Vienna.
Clinic of Infantile Surgery at Montpelier.
Chicago adopts compulsory pasteurization of milk.
Bureau of Child Hygiene in New York City (Health Department).
American Public Health Association standardizes tests for milk.
Water-supply of Union Stock-yards (Chicago) disinfected by chlorine gas.
German Society for Racial Hygiene (Berlin) founded.
250 special hospitals for tuberculosis in United States.
International Moral Education Congress in London.
Denver (Colorado) Medical Society founded.
Biological Station at Kosina (Russia).
Sulfanilamide first synthetized in the dye industry.
1908-9—Ante-natal hygiene started in New York and Boston.
1908-10—William Pasteur describes massive (post-operative) collapse of the lungs.
1909—Srensen investigates hydrogen-ion concentration.
F. F. Russell vaccinates United States Army against typhoid fever.
Förster operates for locomotor ataxia.
Much introduces cobra-venom reaction for insanity.
Sherrington investigates proprioceptive reflexes.
Metropolitan Life Insurance Company (New York) introduces home nursing for industrial policy-holders.
University of Neuchâtel founded (May 18).
Society of Medical History (Chicago) founded.
University College (National University of Ireland) at Dublin.
German Central Committee for Dentistry in School Children (Berlin) organized.
State Dental Institute at Christiania (Oslo) founded.
Society of Medical Missionaries (Leipzig) founded.
German Medical School for Chinese at Woosung, Shanghai (now Fungchi Medical High School).
Illinois Society for Mental Hygiene (Chicago) founded.
Sanborn and Nicolle proved that typhus fever is conveyed by the bite of a louse.
Ehrlich announces side-curtain theory.
1909-13—Marine and Leuhart standardize iodine treatment of goiter.
1909-25—L. and M. Lapicque investigates chronaxia.
1910—R. G. Harrison demonstrates outgrowth of nerve-fiber in extravital culture (1906-10).
Flexner produces poliomyelitis experimentally.
Vedder demonstrates amebicidal action of emetine.
Rollier treats tuberculosis with ultraviolet light (heliotherapy) at Cergant (Ecole de Soleil).
Chapin, Winslow and Robinson emphasize danger of contact infection in communicable diseases.
Martin Fischer explains edema as effect of acids on swelling of proteins.
Hasselbalch devises formula for estimating hydrogen-ion concentration.
Ehrlich and Hata introduce salvarsan (606).
Adelaide Nutting establishes course of public-health nursing at Teachers College (Columbia University, New York).
Nelson Morris Memorial Institute for Medical Research (Chicago) founded.
Rockefeller Sanitary Commission for hookworm prevention (New York) organized.
State Serum Institute (Copenhagen) founded.
Laboratorie de police technique (Lyons) organized.
Berlin Psychoanalytic Society founded.
Veterinary High School (Lisbon) founded.
Centenary of University of Berlin.
National Committee for Preventing Blindness (United States) organized.
Illinois State Commission on Industrial Diseases organized.
Austrian Society for Investigation and Preventing of Cancer (Vienna) founded.
Phonetic Laboratory at Hamburg.
Association internationale des médecins scolaires founded.
Clinic of Industrial Diseases (Milan) opened (March 20).
Institut Pasteur at Algiers.
Archeological Museum at Assuan (Egypt).
Marine Laboratory (Pomona College) at Laguna Beach, California.
Theobald Smith suggests human infection from bacillus abortus.
1910-11—Medical Plant Garden (University of Minnesota) at Minneapolis.
1910-13—Libman describes bacterial endocarditis.
1910-19—Dale, Laidlow, and Richards investigate histamin.
1910-24—Carrel, Burrow (etal) investigate tissue culture and transplantation.
1910-27—A. V. Hill investigates thermodynamics of muscular contraction.
1911—Carrel investigates extravital culture and rejuvenation of tissues.
Cushing describes dyspituitarism.
McCoy and Chapin isolate bacillus of tuleremia.
Naunyn describes infectious cholangitis.
Payton Rous transmits sarcoma via filterable virus.
Gullstrand receives Nobel Prize for optical researches.
Donnan introduces doctrine of equilibrium about a semipermeable membrane impermeable to one ion only (Donnan equilibria).
Bale isolates bufagin.
Meinicke introduces flocculation test in syphilis.
American Public Health Association publishes standard methods for examining milk.
California establishes notification of venereal diseases (July 1).
Universities of Oporto and Lisbon founded.
Kyushu Imperial University at Fukuoka (Japan) founded.
University of Iceland (Reykjavik) founded (June 11).
Biochemical Society (London) founded.
Otho S. A. Sprague Memorial Institute for Medical Research (Chicago) founded.
National Council for Industrial Safety (United States) organized.
Casimir Funk discovered Vitamin B1.
International Society for Individual Psychology (Vienna) founded.
Public Health Ministry (New Zealand) organized.
Kaiser Wilhelm Society for Advancement of Science (Berlin) founded.
Ontario Act regulating municipal milk supply.
National Health Week (England).
George Crocker Cancer Research Fund.
Hygienic Exhibition at Dresden.
Milk Institute at Wangen (Bavaria).
Milk Institute at Fominskoe, Vologda (Russia).
1911-14—Casimir Funk investigates vitamines.
1911-15—Van Slyke devises methods of estimating amino-nitrogen and amino-acids.
1911-20—American Museum of Safety at New York.
1911-27—Pavloff investigates conditional reflexes.
1912—Bass cultivates malarial plasmodium in vitro.
Nicole, Anderson and Goldberger produce experimental typhus in monkey.
Weber and Lorey effect X-ray examinations of abdominal viscera (pneumoperitoneum).
Beurman and Gougerot describe sporotichosis.
Von Behring employs toxin-antitoxin immunization against diphtheria.
Ransohoff performs omentopexy for gastric prolapse.
Berlin Surgical Society founded.
Naval Medical School (Royal Naval College) at Greenwich (England).
South African Institute for Medical Research (Johannesburg) founded.
National Organization for Public Health Nursing (United States) organized.
German hygienic Museum at Dresden (Exhibit of 1911).
Division of Industrial Hygiene (United States Public Health Service) organized.
German Society for Lighting Technics (Berlin) founded.
Austrian Society for School Hygiene (Vienna) founded.
Institute for Hygiene and Infections Diseases at Saarbrücken (Now Medical Bureau for the Saar Region).
Ukranian Medical Society at Lemberg (Lwow).
"Ose" (Society for Jewish Hygiene) at St. Petersburg (transferred to Berlin 1922).
Lombard Medical Society (Societá Lombarda) at Milan.
Chlorination of Chicago water-supply begun.

Elsberg renders intramedullary affections of spinal cord accessible.
Dr. F. G. Gade founds Pathological Institute at Bergen (Norway).
Pathological Institute at Dortmund (Prussia).
1912-13—Gustav Embden and co-workers investigate carbohydrate metabolism.
1912-14—Institut du radium (Curie Foundation) erected at Paris.
1912-16—Cannon investigates effect of adrenal secretions on emotions.
1912-22—Folin and co-workers devise methods of estimating amino-acids.
1912-26—Rudolph Magnus investigates postural reflexes.
1913—Abderhalden introduces ferment reactions.
Schick introduces susceptibility tests for diphtheria.
Krönig and Gauss introduce morphine-scopolamine anesthesia in obstetrics (twilight sleep).
Barthe devises ambrine treatment for burns.
Revival of doctrine of the constitution.
Mollgaard introduces sanocrysin.
Douglass, Haldane, Henderson, and Schneider investigate effect of acclimatization to high altitudes (Pike's Peak) on respiration.
Dakin and Dudley investigate intermediary metabolism of carbohydrates and proteins.
Kinner Wilson describes degeneration of lenticular nucleus.
Aschoff and Landau map out the reticulo-endothelial system.
Holst and Frölich postulate Vitamin C.
Vianna employs antimony tartarate in Leishmaniasis.
Coolidge tube introduced.
Polter-Bucky Diaphragm introduced.
Bose investigates sensation in plants.
Medical Research Committee (London) organized.
International Medical Congress at London.
Wellcome Medical and Medico-Historical Museums (London) founded.
Rockelfeller Foundation (New York) chartered.
International Health Board (Rockefeller Foundation) organized.
Institute for Cancer Research (New York) opened.
Institute for Cancer Research at Hamburg.
Eugenic Research Association (Cold Spring Harbor, Long Island) organized.
Workmen's Compensation Acts effective in 41 countries.
American Society of Experimental Pathology founded.
United States Army Medical Research Board at Manila (reorganized 1922).
German Society for Applied Entomology (Munich) founded.
Bibliographical Institute (Moscow) organized.
Société lorraine de psychologie appliqué (Nancy) founded.
Italian Association for Legal Medicine (Turin) founded.
Cook County Psychopathic Hospital (Chicago) opened.
New York Commission on Ventilation organized.
Netherland Society for Prevention of Venereal Diseases (Amsterdam) founded.
Mental Hygiene Committee (Baltimore) organized.
Massachusetts Society for Mental Hygiene (Boston) organized.
International Society for Investigation of Sex (Berlin) organized.
Saxon Army Museum at Dresden.
Botanic Garden at Cassel (Germany).
National Botanic Gardens at Kirstenbosch (South Africa).
The American College of Surgeons was founded.
Casimir Funk discovers Nicotinic acid.
Sex gland implantation Lespinasse.
Mycological Institute at Hamburg.
1913-15—Sir Leonard Hill, Haldane, and others confirm Flügge's findings on effects of humid heat (1905).
1913-16—Dochez, Gillespie, and Avery type the pneumococci.
McCollum, Davis and Kennedy allocate vitamines A and B.
1913-20—Bourquelot investigates synthesis of glucosides.
1913-27—Maude Slye experiments on heredity susceptibility to, and immunity from cancer.
1914—Hungarian University at Pressburg founded.
Royal Hungarian Unversity at Debrecen founded.
Dejerine describes parietal lobe syndrome (sensitive cortex).
Margaret and Warren Lewis study mitochondria.
Christiansen, Douglas, and Haldane investigate CO_2 carriage by the blood.
Barcroft investigates effect of high altitudes at Cerro de Pasco.
Prussian State University at Frankfort-on-the-Main founded (June 10).
St. Petersburg becomes Petrograd.
China Medical Board (Rockefeller Foundation) organized.
Kitasato Institute for Infectious Diseases (Tokyo) founded.
Medical Research Council (London) organized (Medical Research Committee, 1913).
National Institute for Medical Research (London) founded.
Société de chimie biologique (Paris) founded.
Pacific Association of Scientific Societies (Berkeley, California) organized.
Government Institute for Physiotherapy (Moscow) founded.
National Council for Combating Veneral Disease (London) organized.
American Council Hygiene Association (New York) organized.
Graduate School of Tropical Medicine and Public Health (Manila) founded.
Veterinary Institute at Christiania (Oslo).
New School of Physiology at Cambridge (England) opened.
Eugenics Education Society (Chicago) founded.
City Institute of Obstetrics and Gynecology at Hamburg.
Brady Urological Institute (Johns Hopkins University) at Baltimore.
Russell Park, M.D., died.
Lydston grafts testicle for improvement of sex function, skin, circulation, and arterio sclerosis.
1914-15—Ido and Inada establish spirochaetal origin of infectious jaundice.
1914-18—World War.
1914-19—E. C. Kendall discovers and investigates thyroxin.
1915—Carrel-Dakin treatment of infected (gunshot) wounds.
Delousing of troops organized.
Preventive inoculation against tetanus in gunshot wounds.
Organization of methods of gas-defense.
Futaki and Ishiwara discover parasite of rat-bite fever.
Simmonds describes pituitary dwarfism.
Ramsay Hunt describes progressive cerebellar dyssynergy.
Weber devises method of examining the abdominal viscera by Röntgenography (pneumoperitoneum).
Kjelland forceps introduced.
Infant mortality rate (New York) reduced from 27 (1885) to 9.4 per 100.
Mayo Foundation for Medical Education and Research (Rochester, Minnesota) organized.
Institute of Medicine (Chicago) organized (April 22).
S. S. Goldwater establishes occupation diseases clinic (New York City).
New York City abandons terminal disinfection in favor of control of contacts and carriers.
National Committee for Prevention of Blindness (United States) organized.
Société française de pédagogie (Paris) founded.
Milk and Dairies Act (England).
American Association of Industrial Physicians and Surgeons founded.
Chicago Institute of Medicine organized.
E. A. Leonard, Jr., introduces intraspinal injection of magnesium in delirium tremens.
1915-16—Mott etal. investigate shell-shock.
1915-20—Goldberger investigates pellagra.
1916—Dakin introduces dichloramin-T.
Werner describes Volhynian fever.
Vanghetti introduces cineplasty.
Bull introduces antitoxin for gas-gangrene.
Carlson investigates hunger.
Kasmelson treats purpura hemorrhagica by splenectomy.
Government exhibit of devices for industrial safety (National Museum, Washington).
Physiotherapeutic Institute (Petrograd) founded.
Experimental Institute for Nutritional Physiology (Moscow) founded.
American Radium Society (St. Louis) founded.
Higher Medical School for Women at Ekaterinoslav (Ukraine).
National Research Council (Washington, D. C.) organized.

Ekaterinoslav Medical Institute at Dripropetrovsk (Ukraine).
National Bacteriological Institute at Buenos Aires.
Kroenig and Siegel introduce paravertebral anesthesia by blocking the intercostal nerves.
Carrel and Dakin discover the solution named after them (J.A.M.A. 66: 775, 1585, 1916).
John Benjamin Murphy died.
1916-17—University of Perm (Russia).
1917—Gray and Lemaître establish principle of wound excision (debridement) (Desault, 1790).
Von Economo describes encephelitis lethargica.
Mental Tests employed in recruiting soldiers.
Willems standardizes early mobilization in wounds of joints.
Ruth Tunicliff discovers diplococcus in measles.
Meltzer and Lyon introduce duodenal (non-surgical) drainage of gall bladder.
Alice Evans establishes relation of Bacillus melitensis and B. abortus (Brucella).
Wagner von Jauregg treats paresis by superinfection with malarial fever.
Windaus extracts colesterin (Vitamin D) from cod-liver oil and formulates it.
Levidati describes acute multiform erythema due to streptobacillus moniliformis.
University of Abo (1640) merged into separate Swedish and Finish Universities.
Courses in public health started at Yale University.
School of Hygiene, Johns Hopkins University, estahlished (instruction begun 1918).
Institute for Experimental Biology at Moscow (reorganized, 1920).
State Pharmaceutical Institute at Warsaw.
Municipal Contagious Disease Hospital (Chicago) opened.
Institution for the Blind (Blindenstudienanstalt) at Marburg.
Netherlandish Society for Psychoanalysis (The Hague) founded.
Institut für colloid-Forschung (Theodor Stern Haus) at Frankfurt-am-Main.
Bose Research Institute (Plant Physiology) at Calcutta.
Annals of Medical History (New York) started.
Haldane introduces oxygen as a therapeutic measure.
Chvostek reintroduces iodine therapy in hyperthyroidism.
Browing advocates intravenous injection of proflavin in septicemia.
1917-18—State University at Samara.
American commission investigates trench-fever.
Heavy typhus epidemic in Mexico.
1918—State Universities I and II estahlished at Moscow (Number I founded 1755).
State Universities established at Ekaterinoslav (Ukraine), Irkutsk (Siberia), Nijni Novgorod, Smolensk (Medical Faculty 1920), Tiflis (Georgia) and Voronej.
Folk University at Taskent (Turkestan) founded.
Hokkaido Imperial University at Saparo (Japan) founded.
Medical Faculty, University of Pressburg, moved to Fünfkirchen (Pécs) Hungary.
Fahraeus introduces erythrocyte-sedimentation test.
Gordon Holmes investigates semeiology of gunshot injuries of cerebellum.
Dandy evolves method of Röntgenography of the brain by injection of air into the spinal cord (ventriculography).
Sachs-Georgi introduces flocculation test in syphilis.
Gilman Thompson (New York) organizes clinic for functional reeducation of industrial and war cripples.
Chair of Industrial Hygiene established at Harvard University.
Kraepelin founds Psychiatric Institute (Deutsche Forschungsinstitute für Psychiatrie) at Munich.
Soviet Government founds First Tuberculosis Institute at Moscow.
Institute for Experimental Endocrinology at Moscow.
Industrial Fatigue Research Board (London) established.
Maternity Center Association for Prenatal Hygiene (New York City) founded.
Clinical Institute for Post-Graduate Medical Training at Kiev (Ukraine).
Medico-Biological Institute at Leningrad (now Röntgenological and Radiological Institute).
State Optical Institute at Leningrad.
Institute for Study of the Brain and Psychic Activity at Leningrad (Bechtereff director).
State Central Institute for Physical Education at Moscow.
State Institute for Microbiology and Epidemiology at Saratov.
State Radiologic Institute of Czechoslovakian Republic at Prague.
Central Epidemic Prevention Bureau in Temple of Heaven (Peking).
Home for Investigation of Heating at Munich.
State Diagnostic and Serotherapeutic Institute at Ivanoice (Czechoslovakia).
British Orthopedic Association (London) founded.
Veterinary High-School at Brünn (Moravia).
Italian Society of Veterinary Medicine (Bologna) founded.
Odessa Pediatric Society founded.
Veterinary-Zoological Museum at Vitebsk.
Darwin Museum of Natural Science at Viatka.
Harkness Commonwealth Fund (New York) established.
Ephraim Fletcher Ingalls died.
Marfori finds that the lymphatic glands contain a depressor principle.
Major Strong, U. S. A. discovers the cause and describes pathology of trench fever.
Flexner describes the 1916 outbreak of epidemic encephalitis in Vienna.
Frey discovers quinidine.
Levin, Goodman and Pancoast establish relationship of streptococcus hemolyticus to influenza and pneumonia.
1918-19—Spanish influenza pandemic.
Pan-Ukrainian Academy of Science (Kiev) founded.
1918-24—Flexner, Amoss, and Webster investigate experimental epidemiology.
1918-25—State Institution for Experimental Therapy and Control of Biological Products at Moscow.
1919—Universities established at Brünn (Masaryk University), Cologne, Hamburg (March 31), Laibach (Llubljana, Jugoslavia), Posen (Poland), and Riga (Lativia, September 28).
University of Jurjev (Dorpat, 1632) becomes University of Tartu (Esthonia).
Medical Faculty, University of Astrakhan (South Russia), organized.
University of Pressburg becomes University of Bratislava (Czechoslovakia).
University of Klausenburg becomes Roumanian University at Cluj (October 1).
University of Wilna (Poland) reopened.
British Ministry of Health established (July 1).
Mellanby produces experimental rickets.
Huldschinsky demonstrates curative effect of sunlight (quartz lamp) on rickets.
Swedish University at Abo (Tartu), Finland, opened (January 15).
Kolle and Ritz treat experimental (rabbit) syphilis with Bismuth.
Dale and Laidlaw investigate histamin shock.
Weed and McKihben discover that intravenous injections of hypertonic solutions lower brain-pressure.
E. Mellanby treats experimental rickets with cod-liver oil.
Mercurocrome introduced (Young, White and Schwarz).
School of Hygiene and Public Health (Johns Hopkins University) opened at Baltimore.
Death-rate of New York City reduced from 28 (1869) to 12.93.
Sir James MacKenzie founds St. Andrews Institute for Clinical Research.
Württemburg State Bureau for Medical Investigation at Stuttgart.
Masaryk League against Tuberculosis (Prague) founded.
Czechoslovakian Congress for Tuberculosis organized (1923).
State Institute of Hygiene at Warsaw.
Boyce Thompson Institute for Plant Research at Yonkers, New York.
Institute for Theoretical and Applied Optics at Paris.
League of Red Cross Societies (Paris) founded.
Purkyne Neurological Society (Prague) founded.
Moscow Medical Institute founded.
Metchnikoff Institute for Infectious Diseases at Moscow.
State Institute for Social Hygiene at Moscow.

State Physio-Technical Röntgen Institute at Petrograd.
Chemico-Pharmaceutic Institute at Petrograd.
International Bureau of Labor at Geneva.
Psychiatric Clinic (Hamburg) opened.
Veterinary High-School (Petrograd) founded.
Société de pathologie végétale (Paris) founded.
Psychoanalytic Institute (Berlin) founded.
Institute for Sexual Science (Magnus Hirschfeld Stiftung) at Berlin. Zoöpark at Moscow (Russian Acclimatization Society, 1864).
Miles applies the term "pectenosis" to the contraction of the pecten band.
Schamberg demonstrates the efficacy of arsenical preparation and mercury in the treatment of syphilis.
Frieda Reeder introduces Nirvanol for the treatment of chorea.
Churchman advocates intravenous injection of gentian violet in septicemia.
1920—University of Warsaw (1869) becomes State University at Rostov-on-the-Don.
University of Odessa (1865) becomes Pedagogic High School or "INO" (Institut Narodni Osvity).
Medical Faculty, University of Odessa (1900) becomes State Medical Institute.
State University of the Soviet Republic of Armenia (Erwan) founded.
University of Kiev (1840) reorganized as Drahomanov Institute for Popular Culture.
Noguchi discovers Leprospira ictero-haemorrhagiae.
Widal defines hemoclasia.
Rubin insufflates Fallopian tubes in sterility.
J. B. Ayer introduces cisterna puncture (Wegeforth, Ayer, and Essick, 1919).
Sprunt and Evans envisage glandular fever as mononucleosis.
Meinicke introduces flocculation test.
Ravaut employs sodium thiosulphate in metallic poisoning (arsenic).
Association for Research in Nervous and Mental Diseases (New York) founded.
Union Internationale contre la tuberculose (Paris) organized.
National Health Council (United States) organized.
National Child Health Council (United States) organized.
East German Academy of Social Hygiene (Breslau) founded.
West German Academy of Social Hygiene (Dresden) founded.
Society of Czechoslovakian Physicians (Pressburg) founded.
German Pharmacological Society (Cologne) founded.
Société internationale d'histoire de la médecine (Paris) founded.
Institut iuternational d'anthropologie (Paris) founded.
Institute for Albumen Research (Hamburg) founded.
Russian Medical Society (Medizinskoe Obshestvo) in Berlin.
State Institute for Medical Sciences (Psycho-neurological Institute of 1908) at Leningrad.
State Scientific Public Health Institution at Moscow.
Sanitary-Hygienic Institute at Moscow.
State Bacteriological Institute "Immunity" (1912) at Moscow.
Institute for Tropical Diseases at Moscow.
State Psycho-Neurological Institute at Moscow.
State Institute of Psychiatry and Orthopedics at Moscow.
Pasteur Museum at Strassburg.
Institute for History and Philosophy of Medicine (University of Cracow) founded.
Society for History and Literature of Veterinary Medicine (Berlin) founded.
Society of School and District Physicians (Madgeburg) founded.
Russian Eugenic Society (Moscow) founded.
Russian Protistological Society (Moscow) founded.
Chair of oto-rhino-laryngology established at Montpelier.
Institut Pasteur hellenique (Athens) opened.
State Institute of Dentistry (Warsaw) founded.
University Library, Odessa (1865), becomes Central Scientific Library.
Württemburg State Bureau for Veterinary Investigation at Stuttgart.
Odessa Surgical Society founded.
Accademia Leonardo da Vinci (Naples) founded.
Société française d'ethnographie (Paris) founded.
Institut vétérinaire exotique (Alfort) founded.
Haeckel Museum at Jena.
Bacteriological Laboratory at St. Louis becomes Biological (Pasteur) Institute at Dakar (Senegal).
Institute for Investigation of Industrial Diseases and Accidents at Dortmund (Prussia).
1921—Septcentenary of University of Montpellier.
State University of White Russia (Minsk) founded.
Ukrainian University transferred from Vienna to Prague.
Medical Faculty, University of Charkov (1804) becomes Medical Institute.
University of Malto (1769) reorganized.
University of Kolozvár transferred to Szeged.
Rabindranath Tagore opens University at Santiniketan, Bengal.
Banting and Best isolate insulin.
Rio Hortega discovers microglia and oligodendroglia.
Langley publishes book on autonomic system.
Tonkah Kee founds University of Amoy (China).
A. F. Hess treats rickets by exposure to sunlight.
General use of iodine as an antiseptic (Pregl's solution).
Quarantine Station, New York City, turned over to United States Public Health Service (March 1).
New York Health Department operates 68 infant milk depots.
Industrial Health Service Bureau (Chicago) opened.
Harvard School of Public Health (Boston) founded.
Correspondence Committee on Social Insurance (International Bureau of Labor) at Geneva.
German National Station for Prevention of Alcoholism at Berlin.
State Hygienic Institute at Posen transferred to Landsberg (Prussia).
National Institute of Industrial Psychology at London.
Lichttechnisches Institut at Karlsruhe (Baden).
Institut Behring (for Experimental Therapy) at Marburg.
Personnel Research Federation (New York City) organized.
Institute of Microbiology at Saarbrücken (Saar District).
Italian Society for Study of Sexual Questions at Rome.
Pharmaceutic Institute at Charkov (Ukraine).
Swiss Society of History of Medicine (Zürich) founded.
Ukrainian State Psychoneurological Institute at Charkov.
Biochemical Institute of the Commissariat of Public Health (Narkomzarav) at Moscow.
Institute for Heating Technics at Moscow.
Institute for Medico-Legal and Mental Tests at Moscow.
Psychoanalytic Institute and Laboratory at Moscow.
Sanitary Institute (1889) at Moscow.
State Microbiological Institute at Moscow.
State Venereological Institute at Moscow.
Chemico-Pharmaceutic Institute at Odessa.
Australian National Research Council (Sydney) organized.
Eugenics Society (New Haven) founded.
Society for Racial Hygiene (Kiel) founded.
Royal Botanic Gardens at Peradeniya (Ceylon).
Instituto experimental de veterinaria at Rio de Janeiro.
Psycho-pedagogic Laboratory at Amsterdam.
Gorgas Memorial Institute of Tropical and Preventive Medicine (Chicago) founded.
Society of History of Science and Medicine (Munich) founded.
Schon suggests that Vitamin A is associated with the chlorophyll contents of plants.
Otto Warburg devises charcoal model to illustrate cell-respiration.
Gowland Hopkins isolates glutathione.
Hess and Steenbock discover Vitamin D.
Dr. M. Eitingon founded the first public psycho-analytic clinic.
1921-5—Bacteriological and Serum Institute for Anhalt Area at Dessau.
1921-6—R. L. Kahn introduces serum test for syphilis.
1922—Petrograd becomes Leningrad.
Russian University in Prague founded.
State University at Saratov founded.
Medical Faculty, University of Astrakhan, becomes State Medical Lunacharski Institute.
Finnish University at Tartu (Abo) opened (June 27).
University of Kovno (Kaunas) Lithuania, founded.
Blair Bell revives lead treatment for cancer.

Schutz and Versé describe agranulocytosis.
W. L. Keller improves operation of pleurectomy for empyema.
H. Stieve investigates inhibitory effects of starvation and overfeeding upon sexual capacity.
Sampson investigates ovarian endometrioma.
Piper employs mercurochrome in puerperal sepsis.
Correspondence Committee on Industrial Hygiene (International Bureau of Labor) at Geneva.
German Society for Industrial Hygiene (Frankfurt-am-Main) founded.
Liverpool Cancer Research.
State Institute for Racial Biology at Upsala.
Institute for History of Science at Heidelberg.
Kolloid-Gesellschaft (Leipzig) founded.
German Institute for Scientific Pedagogics at Munster.
Institut für Jugendkunde at Magdeburg.
State Institute for Post-graduate Medical Instruction (Clinical Institute, 1885) at Leningrad.
State Radium Institute at Leningrad.
House of the Learned (Dom Uchenych) at Moscow.
State Institute for Skin and Venereal Diseases (Polyclinic, 1917) at Odessa.
Biological Institute and Biostation (University of Perm) founded.
Pan-Russian Pathological Society (Moscow) organized.
Ose Society for Jewish Hygiene (Leningrad, 1912) moved to Berlin.
Société de gastro-enterologie (Paris) founded.
New England Heart Association (Boston) founded.
Institut Pasteur at Brazaville (Congo).
American Society of Clinical Pathologists (Denver, Colorado) founded.
Animal Diseases Research Association of Scotland (Edinburg) founded.
Biological Institute at Guadalajara (Mexico).
Evans, Mattill, and Sure discover Vitamin E.
Jansen isolates Vitamin B1.
Centenary of birth of Louis Pasteur (December 27).
Bayer Chemical Company introduces "Bayer 205."
Gwathmey and Greenough advocate magnesium sulphate in combination with nitrous oxide or ether as anesthesia.
Haberer introduces a new type of gastro-duedenostomy.
Crile offers a physico-chemical basis for the phenomena of shock.
Young describes his technic of perineal prostatectomy.
Banting discovers insulin.
1923—Royal University of Milan founded (September 30).
Health Organization of Leagne of Nations at Geneva.
George and Gladys Dick discover hemolytic streptococcus of scarlatina and devise susceptibility test.
Graham and Cole introduce cholecystography (examination of gallbladder by X-rays).
Luckhardt discovers anesthetic properties of ethelene gas.
Dandy evolves method of localizing brain tumors by ventricular estimation.
Gwathmey introduces synergistic anesthesia.
Ross Institute and Hospital for Tropical Diseases (London) opened.
International Education Board (Rockefeller Foundation) organized.
Institute for Racial and Constitutional Anthropology at Vienna.
Epidemiological Institute at Zagreb (Jugoslavia).
State Scientific Institute for Maternity and Infant Welfare at Moscow.
Scientific Institute for Microbiological Investigation at Moscow.
Obuch Institute for Investigation of Industrial Diseases at Moscow.
Cabinet for Study of Criminal Personality and Crime at Moscow.
Pharmaceutic Institute at Oslo (Norway).
Alfonso XIII Institute for Cancer Research at Madrid.
Orthopedic Hospital and Institute at Madrid.
Instituto Ruhio (for training lay nurses) at Madrid.
Swiss Institute for Physiology of High Altitudes and Tuberculosis at Davos.
Cancer Institute at Buenos Aires (Argentina).
Parapsychic Institute at Vienna.
Maison des spirites at Paris.
Viennese Society for Röntgenology founded.
Czechoslovakian Biological Society (Brünn) founded.
Eubiotic-Hygienic Society of Czechoslovakia (Pressburg) founded.
Society of Russian Physicians in Czechoslovakia (Prague) founded.
Society of Ukrainian Physicians in Zechoslovakia (Prague) founded.
Latvian Scientific Society (Riga) founded.
Society for Advancement of Applied Psychology (Berlin) organized.
Prehistoric Museum at Eyzies-de-Tayac (Dordogne).
Maudsley Hospital for Nervous Diseases (London) established.
Cleiz and Perlis discover the anesthetic Somnifene.
Finsterer advocates local anesthesia in gastric surgery.
Shoule and Moment introduce amytal.
W. F. Lorenz, A. S. Lovenhart, W. J. Blackwen, and F. J. Hodges, use tryparsamid in treatment of syphilis.
Nobel Prize for 1922 to F. G. Banting and J. J. R. McLoed, of Toronto for development of insulin.
The American Medical Association began publication of Hygeia.
1923-4—Libman and Sacks describe atypical verrucous endocarditis.
1924—Calmette vaccinates children against tuberculosis with B.C.G. (Bacillus Calmette-Guérin: non-virulent bovine culture).
Gustav Magnus publishes monograph on postural reflexes.
Steenbock and Black treat rickets by irradiating food with ultraviolet light.
Marriott employs insulin-fattening for impoverished nutrition in infants.
International Society of Medical Officers of Health (Geneva) organized.
Italian League against Venereal Diseases (Rome) organized.
Liga español contra el cancer (Madrid) organized.
Russian Society of Endocrinology founded.
Society for Prevention of Venereal Diseases (Pressburg, Czechoslovakia) founded.
Polish Society for History and Philosophy of Medicine (Posen) founded (Archiv, 1925).
Czechoslovakian Society of Röntgenologists and Radiologists (Prague) founded.
Northwestern German Society of Internal Medicine (Rostock) founded.
Society of Academic Teachers of Medical Röntgenology (Vienna) founded.
Society of Psychiatrists (Leningrad) reorganized.
Pedagogic Institute at Leipzig.
Institute for Investigation of Psychology of Religions at Vienna.
Institute for Social Medicine at Zagreb (Jugoslavia).
Timiriaseff State Biological Institute at Moscow.
State Institute for Scientific Pedagogics at Moscow.
State Central Museum of Ethnology at Moscow.
Institute for Comparative Culture at Oslo (Norway).
American Society of Parasitologists (Baltimore) founded.
Werner Siemens Institute for Röntgenology at Berlin.
Incunabula Society (Wiegendruckgesellschaft) at Berlin.
History of Science Society (United States) founded at Boston.
American Society of Plant Physiologists (Chicago) founded.
Medical Society (Denver, Colorado) founded.
Braasch and Carman introduce renal flouroscopy at the operating table.
Plummer & Boothby report reduction of pre-operative mortality rate in exophthalmic goitre following Lugol's solution.
Harris suggests the term "hyperinsulinism."
Felton produces his antipneumococcus serum against pneumococcal types I and II.
Barre and Masson of France describe the glomus tumor.
Heyd announces the syndrome called "liver-death."
1925—Hebrew University of Jerusalem opened (April 1).
University of Bari (Italy) opened.
Hess, Weinstock, Steenbock, and Black demonstrate antirachitic properties of cholesterol and phytostererol.
O. Foerster investigates hyperventilation-epilepsy.
Whipple and Robschat Robbins treat experimental anemia with raw liver.

International Health Board (New York) finances State Hygienic Institute of Czechoslovakia (Prague).
Institute for Biological Research (Johns Hopkins University) at Baltimore.
Imperial German Academy of Natural Sciences (1652) at Halle.
Radiologic Institute (Foundation Bergonié) at Paris.
British Social Hygiene Council (London) organized (founded 1914).
Sir Donald Ross opens British Mosquito Control Institute at Hayling Island.
Foederatio bio-climatica organized at Davos.
Society of Friends of History of Medicine (Lemberg) founded.
Confraternity for Psychology of Physical Exercise (Berlin) founded.
German Society for Disorders of the Voice and Speech (Berlin) founded.
Eastern Bureau (Health Section, League of Nations) at Singapore.
Hygienic Institute of Czechoslovakian Republic at Prague.
Ukrainian Biological Institute at Charkov.
International Union of Students (Geneva) organized.
Society of Physicians of Baltic Sea Bathng Resorts (Swinemünde) founded.
Museum of Gymnastics (Berlin).
Public Health Act (England).
Town-planning Act (England).
German Institute of Gynecology at Berlin.
Dr. Howard Kelly announced the use of fine electric needles for surgery.
Edgar Allen and J. P. Pratt discover the female sex hormone.
Stein makes apparent cures of encephalitis with serum of convalescents.
Cotte relieves pain of uterne contraction in dysmenorrhea by resectioning the superior hypogastric plexus.
McDonald reports a depressor substance in liver extracts.
Fridericia and Holm discover relationship between night blindness and Vitamin A deficiency.
Willett of London introduces his forceps.
1926—Minor and Murphy introduce raw liver diet in pernicious anemia.
Vogel introduces ninhydrin (flocculation) test for pregnancy.
C. R. Harrington effects synthesis of thyroxine.
Collip isolates parathyroid hormone.
Birkhaug investigates serology and serotherapy of erysipelas.
Ferry and Fisher investigate serology of measles.
Raymond Pearl obtains logistic curve for population growth.
W. H. Welch appointed professor of history of medicine in the Johns Hopkins University.
School of Hygiene, Johns Hopkins University (1916), officially opened.
School of Tropical Medicine (University of Porto Rico) opened at San Juan (October 1).
Society of British Neurological Surgeons (London) founded.
Benacheion Phythopathological Institute (Athens) opened.
Royal Veterinary Institute at Perugia.
Hygienic Exhibition (Gesolei) at Düsseldorf.
Hygienic Academy at Dresden.
Ukrainian Scientific Society in Berlin founded.
Scientific Institute for Investigation of Ukrainian water-supply at Kiev.
University of Agra (United Provinces, India) founded.
Indo-Chinese School of Medicine and Pharmacy at Hanoi.
Wilder and Associates establish the clinical entity of spontaneous hyperinsulinism.
Jansen & Donath isolate Vitamin B1 and name it Aneurin.
Hector suggests insulin in diphtheria.
McGee succeeds in extracting the male sex hormone from the testis.
Eicholz employs avertin in anesthesia.
Maude Slye proves that certain types of cancer susceptibility and immunity can be inherited by mice.
1927—Noguchi shows causal relation of Bartonella bacilliformis to verruga and Oroya fever.
Ruth Tunnicliff introdnces serum against measles.
Centenary of birth of Lord Lister (April 5).
Ronald Ross Gate of Commemoration unveiled at Calcutta (January 7).
Thomas Henry Simpson Memorial Institute for Medical Research (Ann Arbor) opened (February 16).
Dunn School of Pathology (Oxford) opened (March 11).
Institute of Optics (Paris) opened (March 17).
School of Hygiene (University of Toronto) opened (June 9).
Squier Neurological Clinic opened May 7th.
Pathological Laboratory and Research Institute (City of London Hospital for Diseases of Heart and Lungs) opened (July 19).
Museum of Gynecology at Berlin.
Ukrainian Organo-Therapeutic Institute at Charkov.
Ligue belge contre le rhumatisme (Antwerp) organized.
German Society for Prevention of Rheumatism (Berlin) founded.
Institute for Maternity and Infant-Welfare at Kiev (Ukraine).
Psycho-Neurological Institute at Kiev.
Biological Society at Concepción (Chile) founded.
Centenary of American Journal of Medical Sciences (Philadelphia).
Legislation on ahortion in Germany (May 14).
Bureau of Chemistry (United States Department of Agriculture) abolished (June 30); end of food inspection in United States.
German Food Law (October 1).
German Law abolishing controlled prostitution (October 1).
Lindberg crosses Atlantic in aeroplane.
United States Federal Caustic Poison Bill (Lye Bill) passed.
Brauer Institute (Hamburg) becomes Tuberculosis Institute.
Goldberger and associates discover that pellagra follows a lack of Vitamin B (pp. factor).
Aschheim-Zondek describe a hormone pregnancy test.
Cohn and Minot produce a liver fraction free from protein or polypeptide.
Wilder demonstrates a pathological basis for hypoglycemia due to hyperinsulinism.
The Nobel Prize in Medicine awarded Prof. Julius Wagner Jauregg of Vienna, for work in treatment of general paralysis of the insane by malaria inoculation.
1928—Bicentenary of birth of John Hunter.
Tercentenary of publication of Harvey's De Motu Cardis.
Noguchi discovers pathogen of trachoma.
New Preshyterian Hospital (New York Medical Center) opened, (March 17).
Squier Urological Clinic and Harkness Pavilion (New York Medical Center) opened (March 20).
Centenary of Boston Medical and Surgical Journal, Glasgow Medical Journal, and Gazette des hôpitaux (Paris).
Deutsche Forschungsanstalt für Psychiatrie (Munich) opened (June 13).
Swick and Lichtenberg produce uroselectan.
Shattauck suggests that alcoholic polyneuritis is due to Vitamin D deficiency .
Blackfan and Hamilton treat urea in children with intravenous magnesium sulphate.
Castle and associates describe the role of achylia gastrica in the etiology of pernicious anemia.
Moorhead and Abrahamson describe the new disease thrombophlebitis migraine.
Szent-Gyorgyi obtains hexuronic acid (cevitamic acid) from the glands of oxen.
Paul B. White effects first surgical cure of adhesive pericarditis.
Goldberger completes his work on the study of pellagra.
1929—Aub and associates discover that hyperthyroidism is associated with the production of negative calcium balance.
Swingle and Pfiffner isolate the active principle cortin from the suprarenal cortex.
Kaznelson establishes achlorhydric anemia as a clinical entity.
Derby and associates develop a technic for study of dark adaptation.
Kalk devises a laparoscope for orientation in abdominal cavity.
Matussis discovers a new method of administering violet rays in treatment of lupus vulgaris.
Brand and associates observe that ingestion of glycin in muscular dystrophy is followed by an increase of creatinuria.
Lucas and Henderson discover cyclopropane.
Drury and Szent-Gyorgi observe that adenylic acid and adenosin cause a fall of blood pressure.

Loeb and Bassett and Aron demonstrate the influence of anterior lobe extracts upon the epithelium of the thyroid vesicles.
Edward A. Doisy, C. D. Veler and S. Thayer isolate in pure Crystalline form, the female sex hormone.
1930—President Hoover calls White House Conference on Child Health and Protection.
Higgins and Bates devise a method for determination of basal metabolism in children.
Warren and Scott discover a new serological type of salmonella.
Rabinowitch describes a high carbohydrate-low-calorie diet for diabetes mellitus.
Harris introduces his operation of suprapubic prostatectomy with closure.
W. S. Baer revives the use of maggot treatment of wounds.
Bleckwenn introduces sodium barbital-sodium phenobarbital narcosis for acute psychoses.
Cannon introduces the hormone sympathin.
Howard Jones evolves a technic for spinal percaine anesthesia.
W. C. Corson and G. F. Irwin and I. A. Phillips showed Vitamin D an aid in clotting of blood.
Nobel Prize for 1930 awarded to Landsteiner for discovery of the four types of human blood.
Philip Drinker and L. A. Shaw (Harvard University) invent the artificial lung.
1931—W. H. Park demonstrates methods of evolving 27 additional specific types of pneumonia.
Gutierrez discovers the clinical entity "horseshoe kidney disease."
Crist and Dye demonstrate the parallelism between chlorophyll and Vitamin A content.
Moore discovers large quantities of Vitamin A in the liver following ingestion of foods containing carotene.
Butenandt extracts androsterone from the male urine.
Eley and Clifford employ protein sensitization in hemophilia.
Weese produces sodium evipan.
Nissen resects successfully the entire left lung.
International standard of Vitamin D adapted by Health Organ. League of Nations.
Dr. William L. Gould finds thiosulphate remedy for ringworm of the feet.
Dr. H. A. Shonle announces new anesthetic from alcohol, barbituric acid and amyl.
Dr. C. D. Leake discovers a new general anesthetic related to ether and ethylene.
Dr. Frederick B. Blinn finds viosterol an effective treatment for radium poisoning.
Dr. Lauriston Taylor designs apparatus to measure the intensity of X-ray doses.
1932—Cushing discovers that pituitrin or pilocarpine injected into the ventricle causes activity of the entre cranial portion of the nervous system.
Lewis and Pickering describe a method of testing vasodilatation by heating the body.
Johnson devises a finger plethysmograph.
Maddock and Collier demonstrate peripheral vasoconstriction from products absorbed from tobacco smoke.
McCarthy introduces his resectoscope in prostatic obstruction.
M. Bleicher describes an anatomic technic for suprarenal tumors.
Barringer advocates suprapubic cystotomy and implantation of radon seeds in carcinoma of the bladder.
Wohlwill demonstrates the anatomy of Bang's disease.
Hallevorden demonstrates how dissolved disease substances may reach the brain by diffusion, according to colloido-chemical laws.
De Wolf and Van Cleve summarize the present knowledge of Lympho-granuloma inguinale (the fourth venereal disease).
Rankin and Major demonstrate that hyperplastic tuberculosis of the large bowel is a surgical problem.
Lahey applies successfully Mikulicz's method of closure to resection of the cecum and ascending colon.
Vaughn and Hunter cure megalocytic hyperchromic anemia with marmite (vegex).
Lucy Wells uses marmite successfully in tropical macrocytic anemia.
Charlton employs Reticulin in anemia.
Peck injects snake venom in hemorrhagic diathesis.
Davis and associates locate the afferent spinal sympathetic pathway of the vomiting reflex in the anterolateral tracts of the spinal cord.
C. C. Cody, Jr. finds that vitamin B deficiency is identified with a nasal syndrome.
C. Jackson describes 24 different varieties of benign tumors of the trachea and bronchi.
The American Board of Dermatology and Syphilology is established.
Morris and associates discover the hormone addisin in normal gastric juice.
Wilkinson isolates the active principle called haemopoietin.
Biddle and associates discover a lactogenic hypophyseal hormone.
Caulk describes his punch operation in transurethral prostatectomy.
U. S. Public Health Service announces lowest death rate on record for 1931 and first half of 1932.
Wolf and Schindler perfect the flexible gastroscope.
Cushing calls attention to the syndrome named after him.
First experimental work with protonsil.
1933—Pantothenic acid (10th vitamin) discovered by R. T. Williams.
Mark suggests medium for intravenous urography in diagnosis of ruptured bladder.
Stiles and associates first to employ cyclopropane anesthesia clinically.
M. Bruker treats congestive rhinitis with sclerosing solutions successfully.
Madsen, Sauer and Krueger simultaneously develop a whooping cough vaccine.
Blumgart and associates announce total ablation of normal thyroid in heart failure and angina pectoris.
Potzl of Vienna induces hypoglycemic state in insular shock in treatment of schizophrenia.
Collip and associates prepare extracts of the growth hormone from the anterior lobes of the pituitary glands of oxen.
Foerster gives first report of remarkable clinical qualities of protonsil.
Dr. Lee Foshay and Prof. W. B. Wherry produce serum against tuleremia.
Dr. S. M. Rosenthal discovers formaldehydesulfoxylate as an antidote for bicloride of mercury.
Szent-Gyorgy and King discover Vitamin C.
Reichstein, Grussner and Oppenauer, Hirst and Haworth synthetize Vitamin C.
1933-4—Kuhn and Karrer, Kuhn, Gyorgy, Wagner-Jamegg and Davis, discover Vitamin B2 (G) (Riboflavin).
1934—Stewart removes infected area in osteomyelitis and packs wound with vaseline gauze.
Ruzicka and associates prepare androsterone from cholesterol.
Haldeman and Moore announce that an excess of calcium and phosphorus favor union in delayed healing of fractures.
Hagedorn of Denmark discovers protamine insulin.
Barach introduces helium as a therapeutic gas.
Dam discovers that Vitamin D deficiency produced a bleeding diathesis.
Gyorgy identifies and makes Vitamin B6.
Dr. A. R. Dafoe delivers the Dionne quintuplets.
Dr. E. C. Kendall discovers cortin.
1935—Lahey describes an operation procedure for the elimination of trachea constriction due to thyroiditis.
Macht discovers the analgesic properties of cobra venom.
Dam of Copenhagen discovers Vitamin K.
Dreyer and Reed treat arthritis with massive doses of Vitamin D.
Domagk announces the discovery of protonsil (sulphanilamide).
Laquerur and associates isolate testosterone from bull testis tissue.
Coryllos discusses the indications for surgical tuberculosis.
Tabern and Voluviler introduce new sulfur-containing barbituric anesthetics.
Rosenheim uses mandelic acid in urinary tract infections.
U. S. Army Regulations state that a history of paroxysmal tachycardia is a disqualification for flying.

Dudley and Moir of London, Adair and coworkers of Chicago, and Thompson of Baltimore, simultaneously isolate e:gonovine used in treatment of postpartum hemorrhage.
Drs. Paul D. White and E. D. Churchill relieve Pick's disease by surgical removal of part of the pericardium.
A. C. Ivy announces new hormone, enterogastrone.
Dr. A. Ashley We:ch is first to use protonsil in the United States.
1936—Colebrook and Kenney successfully employ protonsil in puerperal fever.
Churchill contributes to the knowledge of hyperparathyroidism.
Williams and associates synthetize crystalline B1.
Sahyun develops crystalline insulin.
R. A. Peters demonstrates that Vitamin B is composed of 6 entities.
Miller and associates introdnce a number of new thio-barbitu ic and hypnotics.
1937—Long and Bliss confirm the findings of Colebrook and Kenney in their use of the derivative prontylin.
Elvehjem cures black tongue in dogs with nicotinic acid.
Kock lists over 30 androgenic substances.
Harnapp of Germany originates the use of Vitamin D Stoss in rickets.
Kerr devises the lower segment operation in obstetrics.
Dr. Gene Broadhurst isolates the virus of measles.
1938—Warner and co-worke s first report the beneficial effects of Vitamin K and bile salts on bleeding tendency in ob tructive jaundice.
Spies and associates cure human pellagra with nicotinic acid.
Whitby demonstrates the effectiveness of sulfapyridine in pneumonia.
Weiss employs standardized electrocardiographic leads in avitaminosis B1.
Inhoffen and Hohlweg discover pregneninonol for use in treatment of meno-metrorrhagia.
Geist and associates report clinical improvement of uterine bleeding following testosterone propionate.
Dodds and co-workers describe the preparation and estrogenic properties of Stilbestrol.
Butt and associates of the Mayo Clinic repo:t excellent results with Vitamin K and bile in hemorrhagic diathesis of obstructive jaundice.
1939—Foerschler introduces petein vaccine in whooping cough.
Nahun discovers that the U-wave in the electrocardiogram is part of the ventricular complex.
Waddell and Guerry find Vitamin A effective in controlling bleeding in the newly born.
Day reports marked relief of benign prostatic hypertrophy following testosterone propionate.
Holmes isolates Vitamin A in practical pure form.
Dr. Boothby develops a new oxygen mask.
Charles Horace Mayo died (May 26).
William James Mayo died (July 28).
Harvey Cushing, famous brain specialist, died.
1940—Merck & Co. and the Univ:rsity of Texas announce jointly the synthesis of pantothenic acid, the 10th vitamin.
Peral of Montefiore Hospital, New York, announces succe s in the prevention of surgical shock with the cortical hormone de-soxycorticosterone acetate.

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"Some systematization of payment to physicians for medical care and for the prevention of disease can only be of benefit to the medical profession. We would be paid for work that today we largely do gratuitously; we wo ld be enabled to offer our patients better and more complete medical services. If we blindly oppose measures that are designed to bring medical care to those who need it and to align the profession of medicine with the needs of the country, we shall have no voice in guiding the proper development of these facilities.

. . . Physicians cannot restore the good old days of private enterprise. To save themselves and to save the high aims for which they have striven for over 2,000 years they must join with the community in adapting medical practice to the structure and needs of society." —Ernest P. Boas, M. D., speaking before the Medical Society of the County of New York.

Blood-stream invasion by tubercle bacilli may take place at any stage of tuberculosis and at any age: following the primary infection; during the evolution of the disease or as a terminal event. The stage of the disease influences considerably the incidence of implantations in the various organs of the body; the age of the patient plays a minor role. Chronic forms of hemotogenous tuberculosis are uncommon in children only because, as a rule, they do not live long enough for the protracted manifestations of the disease to develop. When tubercle bacilli invade the blood-stream there may result a generalized miliary tuberculosis that overwhelms the patient in a few months or there may be a complete absence of symptoms or any variation between these two extremes. The numbers and virulence of the tubercle bacilli, the frequency of invasion, the portal of entry and the sensitivity of the body to tuberculotoxins will determine the issue.—Tubin, Eli H., Amer. Rev. of Tuber., 1939, 39.

OPTIMIST AND PESSIMIST

The optimist says: "Go ahead, there's not a chance to lose;
The time is now, and, on the dead, you really can't refuse."
The pessimist says: "Wait a bit, and look before you leap;
If there is any good in it, the chance will surely keep."
The optimist sees but the sun, the pessimist the rain,
The optimist prepares for fun, the pessimist for pain.
The optimist pulls forward and the pessimist pulls back,
The one throws wide the throttle and the other sands the track.
This world would be monotonous if folks were all the same,
With no one round to raise a fuss, 'twould be a tiresome game.
The optimist with his glad song, the pessimist so blue;
We really couldn't get along unless we had the two.

Tuberculosis and Tonsils—Sixty-one individuals from whom tuberculous tonsils or adenoids had been removed in the years between 1912 and 1920 were investigated in 1935 at the Johns Hopkins Hospital. Of the 45 who were less than 14 years of age when the operation took place but one had died from tuberculosis and 42 were alive and well. Of 16 cases who were past the age of 14 more than half had suffered from pulmonary tuberculosis of the adult type. Incomplete examinations at the time of operation made it impossible to determine in how many cases the disease was already present in this older group. What did seem apparent was that after the removal of the tuberculous focus, the children under 14 rarely showed progressive tuberculosis of the adult type.—Bordley, J., III, and Baylor, John W., Bull. Johns Hopkins Hosp., 1938, 63.

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300 *X-ray Examinations per Hour*—A new method of x-raying the chests of large groups cheaply and quickly has been developed in Germany. It consists of photographing the fluoroscopic image on motion picture film. When developed, the strip of film is projected on a screen for interpretation. By this method two physicians, assisted by a crew of 10 men, examined at the rate of 300 per hour, more than 10,000 men during a Nazi party celebration at Nüremberg. The device is not a substitute for the standard x-ray technique but is a means of "screening" and it promises the possibility of examining the whole nation. Holfelder, H., and Berner, F., Muenchen. Med. Wchnschr., 1938, 47.

"The defect of this (Wagner National Health) Bill is that it has tried to avoid the most important part in the question, and that is health insurance. Senator Wagner as made several statements. Before the doctors he states that there is no health insurance here. I can tell you that you really could have health insurance under this bill. I don't think these tactics will do any good. There is no way of fooling the American Medical Association . . . I think the Senator's bill was drafted largely to ensnare the doctors."—Abraham Epstein, Executive Secretary, American Association for Social Security, testifying before Senate Committee on Labor.

Marriages

Bernard E. Bolotoff, Rockford, Ill., to Miss Mary Younkus in East Chicago, Ind., in March.

Robert M. Goldstein, Chicago, to Miss Eileen Mandl of Tuckahoe, N. Y., March 27.

Personals

Dr. Lee C. Gatewood, Chicago, discussed "Dysentery Including Amebic Dysentery" before the Madison County Medical Society in Highland, May 3.

Dr. Joseph L. Baer, Chicago, discussed "Prolonged Labor" before the Knox County Medical Society, April 4.

Dr. Thomas Addis, San Francisco, addressed the Springfield Medical Club, April 23, on "Treatment of Glomerular Nephritis."

Dr. Manuel E. Lichtenstein, Chicago, addressed the McLean County Medical Society in Bloomington, April 9, on "The Basis for Therapy in Intestinal Obstruction."

Dr. C. B. Reed addressed the Will-Grundy County Medical Society on May 3, subject, "Causes and Treatment of Prolonged Labor."

Dr. Arthur F. Abt spoke on "Pros and Cons of Sulfanilamide" before the St. Clair County Medical Society on May 2.

Dr. John B. O'Donoghue gave a paper before the Henry County Medical Society, May 2, on "Gall Bladder Surgery."

Dr. Frederick Rehm Schmidt spoke to the Henry County Medical Society on May 2 on "Common Skin Diseases" and also to the Woman's Auxiliary of the Society on "Cosmetics and Care of the Skin."

Dr. Italo Volini addressed the meeting of the Iowa and Illinois Central District Medical Association at Davenport, Iowa, May 16.

Dr. Joseph K. Calvin addressed the Medical Society of the State of New York, Section on Pediatrics, on May 8. Subject, "Tetanus, Its Prevention and Treatment."

Dr. M. Herbert Barker spoke at the Seventh Annual Post Graduate Conference at Wilkes-Barre, Pennsylvania, on April 25. Subject, "The Ionic Contro of Edema."

Dr. Leon Unger addressed the medical staff of the St. Margaret's Hospital in Hammond, Indiana, on May 7, 1940. The title of his talk was "Allergy in General Practice."

Dr. Lorin D. Whittaker, Peoria, discussed "Certain Aspects of Thyroid Disease" before the Peoria Medical Society, April 16.

Alumni of the Division of Biological Sciences, University of Chicago, will hold their annual assembly June 7.

Alumni of Rush Medical College will hold a reunion at the college June 6-7. The program includes symposiums on endocrines, chemother-

apy, abdominal surgery, gastro-enterology, cardiovascular renal disease and traumatic surgery.

Dr. Friedrich P. E. Bornstein, Rochester, among others, addressed the Sangamon County Medical Society in Springfield, May 2, on "Pharmacology of the Myocardium." Dr. Ralph H. Major, Kansas City, Mo., addressed the society, April 4, on "Therapy of Endocarditis Lenta."

Dr. Samuel M. Feinberg was cheduled to hold a clinic on "Allergy" at the Eleventh Indiana Councilor District Medical Association at Huntington, on May 15.

Dr. George W. Post spoke at the Eighty-third Annual Session of the Missouri State Medical Association at Joplin on May 1. Subject, "The Importance of Water Balance and the Electrolytes in the Preoperative and Postoperative Care of Surgical Patients."

Dr. Budd C. Corbus addressed the Central Social Hygiene Clinic, Department of Health, City of New York, on April 15. The title of the paper was "Modern Trends in the Treatment of Gonorrhea." Kodachrome slides showing the cutaneous test for gonorrhea was a feature of the address.

Dr. Ralph B. Bettman addressed the Macon County Medical Society, at Decatur, Illinois, on April 16, on "Recent Development of Gall Bladder Surgery."

This issue of the JOURNAL carries the portrait of Dr. J. S. Templeton, president of the Illinois State Medical Society, as a supplement.

Dr. Arthur F. Abt presented a paper before the St. Clair County Medical Society, East St. Louis, Illinois, on May 2, his subject was "Dental Problems in Children."

Dr. Howard L. Alt was invited to address the Milwaukee Academy of Medicine, May 21, on "Differential Diagnosis and Treatment of the Anemias."

Dr. Herman L. Kretschmer spoke on "Kidney Tumors" on the Eighth Annual Clinic Day at St. Anthony's Hospital, Rockford, Illinois, on May 8.

News Notes

—The new outpatient clinics of the Cook County Hospital group were dedicated, April 19, to the memory of the late Dr. Bernard M. Fantus, director of therapeutics at the county hospital and creator of the "blood bank" for quick transfusions.

—The Institute of Medicine of Chicago announces that the 1939 award of the Joseph A. Capps Prize has been divided between Dr. Charles Fisher for his investigation on "Diabetes Insipidus and the Neurohormonal Control of Water Balance: A Contribution to the Structure and Function of the Hypothalamicohypophysial System," and Dr. Bernard G. Sarnat for his work on "The Teeth as Permanent Chronologic Recorders of Systemic Disease: A Clinical and Experimental Study of Enamel Hypoplasia."

—The thirty-third anniversary of the Ravenswood Hospital was observed at a dinner at the North Shore Country Club May 8. Two of the hospital's founders, Drs. George N. Bussey and George De Tarnowsky, were guests of honor at the dinner. They are still active members of the staff. In the morning the obstetric and gynecologic section of the hospital held a special commemorative program. At this meeting Dr. Bussey, Dr. De Tarnowsky, Dr. Wallace F. Grosvenor and Dr. Clark A. Buswell were guests.

—The Ogle County Medical Society held a meeting April 25, 1940 in Oregon at 7 P. M.

—Superintendent H. R. Lissack, Rochelle, Illinois gave a very instructive lecture.

—"The Professional Man and Public Relations," Mr. Lissack opened the door and invited the doctors to take a look at themselves as seen by the Public. His logical and realistic approach to the problem in the minds of most medical men was illuminating.

—Anton J. Carlson, Ph.D., professor and chairman of the department of physiology, Division of Biological Sciences, University of Chicago, will become emeritus at the end of the current year, the university announces. Since 1929 Dr. Carlson has held a Frank P. Hixon Distinguished Service Professorship. This title will now go to Fred C. Koch, Ph.D., professor and chairman of the department of biochemistry at the university. No successor to Dr. Carlson in the department of physiology has been announced. Born in Sweden in 1875, Dr. Carlson came to the United States at the age of 16 and received his doctor's degree at Stanford Uni-

versity in 1902. In 1904 he joined the faculty of the University of Chicago, becoming professor in 1914 and chairman of the department in 1916. Dr. Koch was born in Chicago in 1876. He took his master's degree at the University of Illinois and that of doctor of philosophy at Chicago in 1912, becoming professor in 1924. He is known for his studies in the field of hormones, enzymes and vitamins.

—In accordance with recently enacted laws, a division of cancer control has been established in the state department of health with offices at 1800 West Fillmore Street, Chicago. Dr. Raymond V. Brokaw, New York, has been appointed chief of the division and Dr. Perry J. Melnick, Chicago, pathologist to supervise a diagnostic service. The total amount of funds available under the two laws is about $18,000 a year. The work will be largely educational, emphasizing early diagnosis and early scientific treatment of cancer. Laboratory diagnostic service will be provided to the extent of resources. Last year in Illinois 11,186 fatalities were attributed to cancer. The appointment of an advisory board to the division of cancer control has also been announced. Present members of the board include Drs. David J. Davis, dean of the University of Illinois College of Medicine, Chicago, chairman; James Scott Templeton, Pinckneyville; Roswell T. Pettit, Ottawa; William M. Cooley, Peoria, and Edwin F. Hirsch, Chicago, secretary.

—Michael Reese Hospital, Cardiovascular Department, offers a full-time intensive course in Electrocardiography. Two weeks, August 19-31, 1940 by Dr. Louis N. Katz, Director of Cardiovascular Research.

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides, and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary sclerosis and myocardial infarction. The mechanism and interpretation of heart irregularities will be developed.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

Reservations may be made upon receipt of $10.00 which will be applied on the tuition. An hourly program of the course will be sent on request.

For further information address:

Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Ave., Chicago, Illinois.

—On May 26 at 3 o'clock the Corner Stone laying services for the new Wesley Memorial Hospital will be held at the Hospital building site, Fairbanks Court and Superior Street, adjacent to the down town campus of Northwestern University. Dr. Franklyn Bliss Snyder, President of the University, will deliver the address and Bishop Ernest Lynn Waldorf will conduct the ritual of the service. This is to be an open service to which the public is cordially invited to attend.

The erection of this Hospital has been made possible through the generosity of Mr. George Herbert Jones, Vice-President of the Board of Trustees. The Hospital will be twenty stories and will contain about 525 beds. It will be the first unit in a group of buildings to be known as the George Herbert Jones Hospital Center.

Considerable study has been given to the development of the Hospital as a community medical center. It is the desire of Mr. Jones and the Trustees that the Hospital be a center from which will emanate knowledge concerning advances in medical science.

The Hospital building will be of the latest design, constructed in the shape of an X so that every room will be an outside one. Its equipment will be the most modern and scientific available.

The service will feature moderate priced private room accommodations which are not available in many hospitals.

Wesley Memorial Hospital is completing its fifty-second year of service, having received its

first patient on Christmas Day, 1888. From time to time it has outgrown its quarters. It moved from Dearborn and Ohio Streets in 1889 to 355 E. Ohio Street, and from there to its present location, 25th and Dearborn Streets, in 1891. A new addition was erected in 1901 and the present structure completed in 1910.

Mr. F. J. Thielbar, President of the Board of Trustees, has appropriately called the new Hospital "Wesley, the Cathedral of Healing."

Deaths

George Ludwig Alt, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; a Fellow, A.M.A.; served during the World War; aged 58; died, March 25, of coronary thrombosis.

Eleanor Beatty, Pana, Ill.; Hering Medical College, Chicago, 1895; aged 81; died, March 21, of crysipelas and arteriosclerosis.

Overton Brooks, Chicago; Northwestern University Medical School, Chicago, 1906; a Fellow, A.M.A.; fellow of the American College of Surgeons; naval examining officer in Chicago during the World War; past president of the North Side Branch of the Chicago Medical Society; was surgeon to the Chicago Great Western, Monon and Erie railroads; aged 59; on the staffs of St. Joseph's Hospital and the Henrotin Hospital, where he died, March 28, of lymphosarcoma and pneumonia.

Martin L. Brookshier, Georgetown, Ill.; Barnes Medical College, St. Louis, 1903; member of the Illinois State Medical Society; aged 62; died, March 22, of chronic asthma.

Daniel Roberts Browder, Mercedes, Texas; Rush Medical College, Chicago, 1902; aged 65; died, March 12, of cerebral arteriosclerosis.

Thomas Achilles Dicks, Broadlands, Ill.; University Medical College of Kansas City, Mo., 1892; a Fellow, A.M.A.; aged 73; died, March 28, of heart disease.

Joseph Philip Evans, Chicago; Loyola University School of Medicine, Chicago, 1930; a Fellow, A.M.A.; clinical assistant in medicine at his alma mater; aged 38; died, March 21, at Rochester, Minn., of glioma of the brain.

Martin William Fitzpatrick, Decatur, Ill.; Rush Medical College, Chicago, 1903; a Fellow, A.M.A.; aged 65; formerly on the staff of St. Mary's Hospital, where he died, March 22, of heart disease.

Vincent Gino, Chicago; Regia Università degli Studi di Palermo Facoltà di Medicina e Chirurgia, Italy, 1902; served during the World War; on the staff of the University Hospital; aged 63; died, March 4, of coronary thrombosis.

Clarence Philip Holoffe, West Frankfort, Ill.; University of Illinois College of Medicine, Chicago, 1935; a Fellow, A.M.A.; aged 28; died, March 10, in the Barnes Hospital, St. Louis, of acute myocarditis.

Moses Haynes, Bingham, Ill.; Missouri Medical College, St. Louis, 1877; aged 90; died, March 16, of intestinal obstruction.

William A. Jones, Quincy, Ill.; Missouri Medical College, St. Louis, 1880, aged 82; died, February 10, in Middletown, Ohio, of coronary sclerosis.

John Kercher, Chicago; Chicago Medical College, 1890; member of the Illinois State Medical Society; aged 77; died, March 20, of arteriosclerosis.

Orla E. Kuhn, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1904; on the staff of the Garfield Park Community Hospital; aged 61; died, March 8.

Harry E. Marselus, Dixon, Ill.; American College of Medicine and Surgery, Chicago, 1904; a Fellow, A.M.A.; member of the American Psychiatric Association; on the staff of the Dixon State Hospital; formerly on the staffs of the Peoria (Ill.) State Hospital, Lincoln (Ill.) State Hospital and the East Moline (Ill.) State Hospital; aged 59; died, February 25, in Sheyboygan, Wis., of coronary embolism and hypertension.

Adolph Bernard Oyen, Chicago; Detroit College of Medicine, 1890; a Fellow, A.M.A.; an Affiliate Fellow of the American Medical Association; on the staffs of the Lutheran Deaconess Hospital and the Norwegian American Hospital; aged 82; died, March 24, of cerebral hemorrhage.

Vance M. Powell, Peoria, Ill.; Louisville (Ky.) Medical College, 1894; aged 73; died, March 28, in St. Francis Hospital of carcinoma of the ileum.

Charles Ellis Shultz, Bloomington, Ill.; Rush Medical College, Chicago, 1900; member of the Illinois State Medical Society; served during the World War; formerly city health officer; at one time superintendent of the Fairview Sanatorium, Normal; aged 73; died, March 2, in St. Joseph's Hospital, of hypertension and nephritis.

Samuel Lorenzo Stevens, Dalton City, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; member of the Illinois State Medical Society; served during the World War; aged 65; died, March 31, of chronic cardiovascular disease.

Wallace Marsh Waterman, Oak Park, Ill.; Rush Medical College, Chicago, 1887; aged 74; died, March 6, of arteriosclerosis.

Charles Edwin Waters, Murrayville, Ill.; St. Louis College of Physicians and Surgeons, 1908; aged 67; died, March 23, when he was struck by a train.

Clarence Leonard Whitmire, American Lake, Wash.; University of Illinois College of Medicine, Chicago, 1919; a Fellow, A.M.A.; member of the Illinois State Medical Society and the American Psychiatric Association; senior physician on the staff of the Veterans Administration Facility; aged 44; died, March 2, in Tacoma of ruptured dissecting aneurysm of the aorta.

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Book Reviews

THE FOOT AND ANKLE: THEIR INJURIES, DISEASES, DEFORMITIES AND DISABILITIES. By Philip Lewin, M. D. With 303 illustrations. Philadelphia. Lee & Febiger. 1940. Price, $9.00.

This book has been written to guide the student, industrial surgeon and the younger orthopedic surgeon in the diagnosis and treatment of the diseases, disabilities and deformities, not only of the foot but of the ankle as well. Here is presented in natural sequence and concise language the underlying principles of the etiology, pathology, diagnosis and treatment of congenital, static, infectious and paralytic lesions of these parts. Special consideration has been given to fractures, dislocations and similar conditions.

The work has been covered from all the practical points of view—orthopedic, surgical, gynecological, neurological, sociological and economic. Emphasis is continually placed on the fact that the chief objective of treatment is to restore function. At the same time the physician must be able to make a fair estimate of partial or total disability so that in compensation cases all parties involved may be treated fairly. In this task the book will be truly helpful. The relation of foot defects to other bodily complaints is fully covered. The importance of routine examination is stressed and the responses evaluated. The relationship of orthopedics to neurology is emphasized. In fact, every phase of the subject is fully covered.

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CHEMISTRY AND MEDICINE. Edited by Maurice B. Visscher. Minneapolis. The University of Minnesota Press. 1940. Price, $4.50.

The volume consists of fourteen papers, delivered at the fiftieth anniversary of the founding of the medical school at the University of Minnesota. Progress in the application of chemistry to medicine, including recent investigations in metabolism, immunity, chemotherapy, and nervous control of the organism, are treated.

The contributors are Best, Bronk, Burr, Cannon, Freundlich, Gasser, Heidelberger, Helmholz, Long, McQuarrie, Peters, Smith and Visscher.

THE MARCH OF MEDICINE. New York. Columbia University Press. 1940. Price, $2.00.

This work is edited by the Committee on Lectures to the Laity of the New York Academy of Medicine and is sufficiently authoritative to prove of value to medical men implemented and enriched with a knowledge of the history of their profession. It is sufficiently simple and clear to prove of special value to those who have a marginal interest in medicine.

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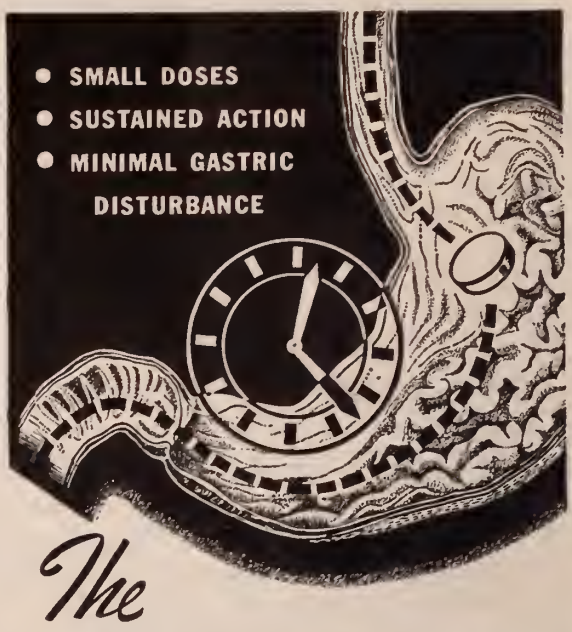
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*Goetsch and Pappenheimer (J. Exp. Med.) v. 54, p. 145, 1931.
*Morgulis and Spencer (J. Nutr.), v. 11, p. 145, 1931.
*McCollum and Mackenzie (Pub. Health Rep.) v. 53, p. 1779, '38.
**F. Bicknell (Lancet) Jan. 6, 1940.

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Book Reviews

A TEXTBOOK OF PATHOLOGY. By W. G. MacCallum, Professor of Pathology and Bacteriology, the Johns Hopkins University, Baltimore. Seventh Edition, thoroughly revised. 1302 pages with 697 illustrations. Philadelphia and London: W. B. Saunders Company, 1940. Cloth, $10.00.

The fact that this work has gone through seven editions in rapid succession speaks volumes in its favor. This work is a textbook in every sense the word implies. It brings the subject of pathology strictly up-to-date and should be in the library of every physician, surgeon and student.

CLINICAL HEART DISEASE. By Samuel A. Levine, M. D., F. A. C. P., Assistant Professor of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton Hospital; Physician, New England Baptist Hospital, Boston. Second Edition, revised and reset. 495 pages with 109 illustrations. Philadelphia and London. W. B. Saunders Company, 1940. Cloth, $6.00.

This work contains the author's views on most of the cardiac problems arising in ordinary medical practice. The same general form has been retained as in the previous edition. There is a certain amount of repetition which serves as emphasis and avoids the necessity of referring so often to other parts of the book when reading a particular subject.

MINOR SURGERY. By Frederick Christopher, S. B., M. D., F. A. C. S., Associate Professor of Surgery at the Northwestern University Medical School, Chicago; Chief Surgeon at the Evanston (Ill.) Hospital. With a Foreword by Allen B. Kanavel, M. D., F. A. C. S. Fourth Edition, reset. 990 pages with 639 illustrations. Philadelphia and London. W. B. Saunders Company, 1940. Cloth, $10.00.

The dividing line between major and minor surgery is often difficult to determine and, in the author's desire to encompass the field, the textbook designed to present minor surgery in a compact form frequently defeats its purpose by being too inclusive. The author has avoided this error and has presented in an adequate form the details of the diagnosis and treatment of truly minor surgery. The work is the result of the author's wide experience not only in manner but in general surgery. The work fills a long felt want.

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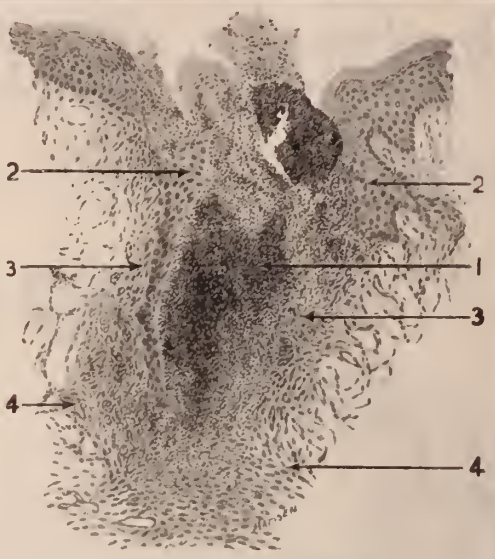
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